The Journal of the
American Medical Association

VOL. XXXIII CHICAGO, ILLINOIS, AUGUST 26, 1899. No. 9.

Original Articles.

HYDROTHERAPY.

A NEW BATH FACILITATING ITS USE IN PRIVATE PRACTICE.*

BY A. C. HAVEN, M.D.
LAKE FOREST, ILL.

RÉSUMÉ.

Brief history of the Use of Water in Medicine.
Prejudice against Water, and Reasons.
Physiologic Action of Water—Cold and Hot.
Therapy—All Hyperpyrexia, etc.
Contraindications.
Technic.
Exhibit of New Bath.

The remedy I wish to exalt to-day is no new substance, compounded in German laboratory by processes of synthesis, but an original product, direct from the hands of the Creator; utilized first by Adam, recognized and recommended by all the illustrious followers of Esculapius to the present day; even used by the Great Physician, Jesus Christ, who commanded the leper to go bathe in the river Jordan and be made whole. Yet with all these unparalleled recommendations, water is largely neglected by the busy practitioner of to-day, for the easier prescription which the druggist may compound. One hundred years ago Cullen sang the praises of cold water, and Brand of Stettin, Von Ziemsen, and our own Baruch, and many others have fought nobly to win it a place in our pharmacopeia. But their success has only been partial. Why has it not been complete? Surely not because the remedy does not meet the expectations of those who give it a fair trial. But it is such a common, every-day remedy with such an ordinary name. Sometimes I think if it were given its chemical name of protoxid of hydrogen, it would rise in the estimation of the profession.

Then, for a long time it was utilized by quacks, who did not use it scientifically, and recommended it as a "cure-all," thereby prejudicing the honest physician against it. Another cause of failure is because of a monstrous error which has deeply saturated the minds of the laity; and many otherwise learned physicians, too, are afflicted with the same paralyzing fear of "catching cold" from the use of water. The very remedy most potent in preventing colds is accused of producing them. Nansen and his crew had no colds in the Arctic regions. Only when they reached civilization did colds appear. Zymotic influences undoubtedly figure in their etiology. How absurd then to allow this illogical reasoning to deprive us of a powerful and beneficent remedy.

Sometimes I think a great part of the race are victims of true hydrophobia. I had occasion to recommend a bath to a patient recently and was electrified with the response: "I don't know as it would make any difference, Doctor, but there has not been a drop of water on my body for twenty years."

The more formidable objection is the *time* required for the proper use of this remedy. Many argue that water is all right for hospitals where time is abundant, and helpers many; but the fact that water is almost universally used in hospitals, argues that this remedy will accomplish what other drugs fail to accomplish, else why should hospitals go to all this trouble and expense? And a remedy which works such marvelous results in hospitals is a good thing for physicians generally to understand and use, and the chief purpose of this paper is to prove that the remedy can be applied to private practice without the loss of too much time, and without great inconvenience. I shall try to show how the patient in the country farm-house and the crowded city tenement may receive the blessings of this unequaled remedy.

Still another reason why the bath is not more often used by the private practitioner is due to a lack of appreciation of the physiologic action of such baths. To be sure baths are useful for cleansing purposes, and they also reduce bodily temperature, but baths are more potent as therapeutic remedies than that. Briefly, a cold bath stimulates all the nerve-centers, liberating new nervous energy, and thereby stimulating all the functions of the body and greatly improving the patient's resisting power against disease. The heart is powerfully strengthened, not weakened, as many suppose. The kidneys act vigorously after a bath, and experiment has proven the urine far more toxic after than before a bath, showing elimination of the poisonous ptomains. The lungs, too, do their part, as respiration is powerfully stimulated by the cold bath, increasing the supply of oxygen and the exhalation of poisons. The skin is another channel of elimination that is greatly augmented by the cold bath, and bed sores are far less liable to appear. In fine, the cold bath fortifies the patient in his struggle against disease, stimulating the vital functions and hastening the throwing off of the poisonous ptomains and their products. No other remedy can approximate it in usefulness at times. Nor do the baths inhibit the use of other therapeutic measures; they simply co-operate with them.

Hot baths, too, have their own distinct physiologic action, quite different from the cold. The warm bath numbs the terminal nerve-fibers, rendering them less sensitive, and thereby producing a sedative action. Baths over 105 irritate the vasoconstrictors, resulting finally in paralyzing them, dilating the peripheral vessels and raising internal temperature.

As to therapy, all hyperpyrexiæ are far more readily controlled by cold baths than by any other known remedy. Phenacetin and other coal-tar derivatives weaken heart action, if long used, and the patient merely dies with a normal temperature. Whenever delirium, restlessness and insomnia appear, the cold bath is indi-

* Presented to the Section on Practice of Medicine at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus O[illegible], June 6-9, 1899.

cated. Cyanosis and signs of collapse are urgent symptoms demanding the use of the warm bath with cold affusion over the head and shoulders, with gentle friction. This will often rescue the sufferer from the very jaws of death, in a manner unknown to any other therapeutic measure.

If, for any reason, I can not use cold baths in typhoid fever, I confess I feel my patient has had only half a chance of recovery. The mortality has been reduced from 25 per cent. to almost nothing, when the baths are properly administered. In the last two years I have treated some forty cases without a single fatality.

It is in typhoid fever that the cold bath is seen in all its perfection. Its results are almost magical. Until some true specific, some antitoxin, is discovered, which will abort the disease, I shall continue the use of the cold baths in typhoid fever, in the belief that I am thereby giving my patient the safest and best treatment. Many lives might annually be saved, were this treatment more universal. I cannot understand why it is not the rule, the orthodox treatment in private, as well as hospital practice, unless it be that the busy practitioner feels he can not spare the time and labor necessary. It is not as difficult as many suppose, and even if it were, the results warrant the extra effort.

The exanthemata have long been treated with the initial warm bath. Strange to relate, the cold bath, with friction, is far more effective in bringing out the rash, and, contrary to old ideas, will not suppress the eruption. When high temperature and marked nervous symptoms appear in the exanthemata, nothing approaches the cold bath in quickly benefiting the little patient.

You are all familiar with the sedative effect of the hot bath in uremia, in convulsions of all kinds, and in cerebrospinal meningitis, and of its benefit in rheumatism and many chronic complaints which time forbids me alluding to.

The modern treatment of pneumonia in children demands the use of the warm bath, which not only reduces fever, quiets nervous symptoms, insures sleep, but tones up the heart action, thus facilitating recovery greatly. Bronchitis, too, in children is greatly relieved by the timely use of the warm baths. The list might be extended, but my object is merely to show that baths are no mean power for good, and should not be neglected or rejected.

The contraindications to the use of the bath are far less than are usually supposed. When rest is imperative, as in pleurisy, peritonitis, perforation or hemorrhage in typhoid, baths are best discontinued. A certain chilly sensation or even cyanosis of the body does not contraindicate their use, but cyanosis of the face is an indication of danger. Syncope may cause their cessation. Atheromatous cases and angina pectoris contraindicate hot baths.

As to technic, ten or fifteen minutes usually suffices, but one point I would emphasize in the cold bath, viz.: *friction*, which is absolutely necessary, over the surface of the body, insuring reaction and preventing internal congestions. The neglect of this is fatal to the good effects of the cold bath.

I do not recommend the bath as a "cure-all." It is merely a powerful remedy in combating disease which I feel is not as generally used or appreciated as it should be. It is one of many remedies which should belong to every physician's armamentarium, be he hospital, city or country practitioner.

The bath I have devised is cheap, enabling many to use it. It is portable, no larger than an ordinary handsatchel when folded, and can be carried by the nurse or physician. It can be operated by one attendant, as no lifting of the patient is necessary. It is simple, with nothing to get out of order. It consists of a canvas strap, encircling the head-board of the bed, the ends of the canvas belt fastened by a simple catch, so that the belt may be drawn taut, another canvas belt of similar design for the foot-board, two rings, twenty-six inches apart in each canvas strap, a rubber sheet hemmed at both sides, in which slip ropes, on the ends of which are four snaps. The patient is rolled on the sheet, the four snaps are caught in the four rings, and the tub is ready for the water. It is emptied by lowering one corner, and finishing with a small piece of rubber hose used as a syphon. When not in use it folds up in a small cotton bag.

A still simpler modification can be made with a rope tied firmly around a head-board, another around a foot-board, and two parallel ropes connecting them, and three yards of common table oilcloth, fastened by a dozen clothes-pins to the rope.

In my judgment, there is no excuse for the busy practitioner neglecting a remedy that will do for his patient what no other drug will do. My one wish in writing this paper is to forcibly call your attention to the fact that this common, every-day, despised, neglected, yet potent remedy, *water*, should be used, and can be used, by every physician who truly has the good of his patient at heart.

PNEUMONIA.

ITS COMPLICATIONS AND SEQUELAE*

BY R. B. PREBLE, M.D.

CHICAGO.

(Concluded from p. 446.)

ENDOCARDITIS.

Aufrecht states that the frequency of acute endocarditis as a complication of pneumonia seems to vary with time and place. He personally has seen but one case. Netter reports 9; Weichselbaum 6, and Sello 6. According to the tables given by Jurgensen, it occurs in 0.2 per cent. of the cases in Vienna and Stockholm; in 0.9 per cent. of the cases in Basel. Sello's 6 cases were in 750 cases of pneumonia, making 0.8 per cent. Banti found 2 cases in 27 autopsies; Netter 2 in 26 autopsies. Netter has had a personal experience with 55 cases of ulcerative endocarditis, of which 23 were due to pneumococcus, and of this 23, 16 were associated with pneumonia.

The endocarditis may be either verrucose or ulcerative, but is usually the latter. Any condition which debilitates the patient—alcoholism, pregnancy, and the age between 30 and 60—predisposes to the occurrence of the pneumonic endocarditis. The date of onset cannot be accurately determined in many cases, but usually it is a late rather than an early complication. It presents some interesting contrasts to other forms of acute endocarditis. One-seventh of the cases collected by Netter were on the right side. This is three times the proportion found in the more common forms of endocarditis. The basal valves, aortic and pulmonary, are more often affected than the auriculo-ventricular. Another point is that while the vegetations are often large, emboli are

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

infrequent. The endocarditis may begin during the course of the pneumonia, in which case the symptoms are easily overlooked, at least until the pneumonic symptoms disappear. More commonly, however, the pneumonic symptoms end in the usual way, and after a shorter or longer period of apyrexia, the fever reappears and the course runs similar to that of any other acute endocarditis. The clinical course does not present any marked differences from the pyogenic endocarditis, but in general the fever is more regular, the duration is longer, and the emboli are less frequent. The mortality is very high, and more than half these cases die within the first month. Recovery may occur, as is illustrated by Case 4, in whom it seemed reasonable to believe the endocarditis pneumonic. We must also mention the frequency with which endocarditis is associated with meningitis, seven-ninths of the cases of endocarditis showing meningitis, while only one-third of the cases of meningitis show endocarditis.

ARTHRITIS.

Arthritis is not a common complication of pneumonia. Vogelius, in 1896, could find but 11 cases, including 2 of his own, in which a complicated arthritis was demonstrated as due to the pneumococcus. Netter collected 18 cases. In 4156 cases of pneumonia reported from the various German clinics, there are only 6 cases of arthritis. The arthritis may occur at any time during, after, or even before, the development of the pneumonia. The process is usually monarticular, and in the upper extremities, where it affects the larger joints oftener than the small. If it occurs before the pneumonia, or after the crisis, it causes manifest constitutional symptoms beginning with a chill. If during the course of the pneumonia, there are only the local joint changes, swelling, redness, pain, with serofibrinous or purulent fluid on aspiration of the joint. Such joint changes are extremely serious, for they are local manifestations of general infection, which almost always causes death.

Joint pains are more common than the arthritis, and, like it, are more often monarticular, and usually in the upper extremities. Netter found 17 cases of polyarthralgia and 35 cases limited to one joint. There may be no demonstrable changes in the joint, and the pain may be but transient, or there may be redness and swelling, and fluid in the joint. Such cases may recover on simple fixation even after weeks.

Suppuration in the soft parts has been seen repeatedly, but presents no special symptoms. There may be one or many such foci in any case. In general, the infectious complications occur in combination rather than singly. I have been able to find no references to suppurative panophthalmitis as complication of pneumonia, although I have personally seen two instances of it.

The following cases may be cited as illustrations of this complication:

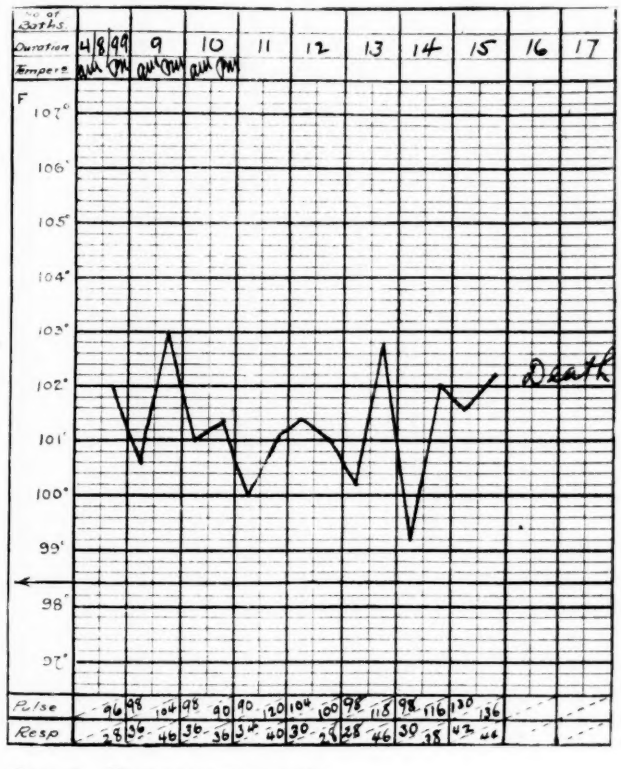
Case 7.—Dennis G., aged 33, entered Feb. 6, 1899. Family and personal histories were without interest. During the early part of January he had had la grippe, and on January 23 had a chill; since then he has been worse. He had more or less diffuse pain, especially marked in the left side, and pain in the right side increased by breathing, also pain in the right shoulder and all the joints of the left arm. He had some cough, nausea, vomiting; anorexia, constipation, insomnia.

Examination showed an intelligent and well-nourished adult, breathing rapidly and noisily. He had marked icterus, erythema over the sacrum, left shoulder and elbow, with some superficial erosion. Right chest: Dulness below the eighth dorsal spine, extending forward to the axilla; over this area lessened breath and voice sounds; farther forward, pleural friction. Left chest: Below the third spine dulness, tubular breathing, bronchophony and crepitant râles. Heart, nervous system and abdomen were negative. The joints of the right foot, left knee, elbow, wrist and left second metacarpal phalangeal joint were red, swollen, painful, and tender. Temperature was 100 in the axilla; pulse 96; respirations 28. Temperature ranged from 98 to 101; pulse from 96 to 130; respirations from 28 to 48 for forty hours, until death. Smears and cultures made from the left wrist and from the blood show pneumococci.

Diagnosis: Pneumonia of the left lower lobe, right-sided pleurisy with effusion, and multiple arthritis due to pneumococci. No autopsy.

Case 8.—D. R., a watchman, entered March 8, 1899. Two months before he was in Ward 4 with typhoid and pneumonia, and was transferred from there to the contagious ward with erysipelas. Finally he recovered and left the hospital ten days. Five days ago he had repeated chills and became delirious, and now complains of pain in the right knee and left shoulder.

Examination showed a well-developed, but emaciated adult, breathing rapidly, very deaf. The heart and left lung were negative. The right lung showed signs of consolidation over the right upper and part of the middle lobe, with friction in the lower part of the axillary region. The liver extended three finger-breadths below the costal arch and was tender. Urine, 1010; contained a large amount of albumin, granular and epithelial casts. Joints were tender, and there was swelling of the right knee and left shoulder. (For temperature, pulse and respiration see curves.)



Case 8.—Pneumococcus pyemia.

March 10, abscess on the back was opened, and pneumococci found in the pus.

March 13, abscess on the scrotum; pneumococci found in the pus.

Patient died one week after entrance.

Diagnosis: Pneumonia with multiple abscess in the soft parts, with multiple arthritis; nephritis.

Case 9.—Child 14 months of age, seen with Dr. Prince. Eight days ago the patient was seized with convulsions, and when seen by Dr. Prince had pneumonia of the left lower lobe. Three days later it had swelling of the left hand. When seen by me on the eighth day of the illness, it had a resolving pneumonia of the left lower lobe. There was a circumscribed red, tender, and painful swelling in connection with the left humerus just above the elbow-joint, and swelling and redness of several small joints of the left hand. I advised removal to the hospital, where the patient was placed in the care of Dr. Ochsner, to whom I am indebted for the subsequent history.

The swelling of the left humerus was opened and proved to be a periostitis due to the pneumococci. Several other abscesses developed later in other parts, and were opened in the

course of the following weeks. The child had also, a few days after entrance into the hospital, a return of the pneumonia, and several weeks later had an otitis media. No examination of the blood was made. Eventually it made a complete recovery.

Diagnosis: Lobar pneumonia, with subsequent pyemia due to the pneumococcus.

OTITIS MEDIA.

Otitis media is a rather common complication, the infective agent reaching the middle ear by extension through the Eustachian tube. It may be unilateral or bilateral, and occurs more frequently in children than in adults. Ball illustrates by personal cases the fact that many of the general cerebral symptoms seen in meningitis may occur in otitis media following pneumonia. There was headache, vomiting, delirium, restlessness, fever, and coma, all disappearing promptly after the rupture of the tympanum. None of these cases presented any focal symptoms.

Turning now from the complications in which the infective agent travels along blood or lymph vessels or ducts, let us take up those where the extension is direct, such as pleurisy and pericarditis.

PLEURISY.

Pleurisy is by all odds the most common complication; so common, in fact, as scarcely to deserve the name of complication, for it occurs whenever the pneumonic process reaches the surface of the lung. The exudate is usually fibrinous, and limited to the pleura covering the pneumonic area. Such cases can be recognized only by the pain which they cause, and sometimes by friction also. Cases where the exudate is largely serous, causing the accumulation of fluid in the chest in sufficient amounts for recognition, are less common, their frequency being indicated by the following table:

Pneumonia	Cases.		Pleuritis.	Per Cent
Vienna	5738	298	exudativa	5.2
Stockholm	2616	104	do	4.0
Basel	230	35	do	15.3
Aufrecht	1501	89	serous and purulent	5.5
Sello	750	65		8.7
Grisolle				12.6
Dinstl in Vienna (1857-61)				15.8

When we recall that at least 400 c.c. of fluid are necessary before fluid can be demonstrated in the adult chest, it is evident that many cases are overlooked. The percentage of cases in which there is a large effusion is small, about 1 per cent., according to Sello.

The pleuritis may precede or follow the pneumonia, the former being the decided exception. In 57 cases in which Sello demonstrated the presence of fluid by exploratory puncture, only 2 were at the beginning of the pneumonia, 31 during the pneumonia and 24 after the crisis. It usually appears about the fourth or fifth day of the pneumonia. Such a pleurisy has but little effect upon the clinical course of the pneumonia, and does not, according to Huss, materially increase the mortality, only 0.8 per cent., according to him. Jurgensen agrees with this,but quotes statistics from Basel, where the mortality of pneumonia with pleurisy was double the average mortality. When the pleurisy follows the pneumonia, there is no constancy about the clinical course; there may be no temperature, or there may be days of high and remittent fever when the fluid is serous.

The diagnosis of pleurisy with effusion complicating the pneumonia is dependent entirely upon physical signs, the distinctness of which is proportional to the amount of fluid. In some cases the signs of fluid are so marked as to entirely obscure the signs of the pneumonia. In making the diagnosis more attention should be paid to pressure symptoms, such as dislocation of the heart, decrease in size of Traube's space, than to intense dulness with loss of vocal fremitus and breath and voice sounds. The latter signs, as already stated, are absent in cases of massive pneumonia also.

The diagnosis of the nature of the fluid can be made by exploratory puncture only, and this should always be made, irrespective of the degree or type of the fever, if the signs of fluid persist for any length of time after the resolution of the pneumonia, in order to demonstrate or exclude the presence of an empyema.

EMPYEMA.

Empyema is by no means a rare outcome of the meta-pneumonia pleurisy, and like the other complications, varies in frequency from time to time and place to place. Aufrecht found 23 empyemas in 1501 cases of pneumonia; i. e., 1.5 per cent. Sello found 34 in 750 cases, which is 4.5 per cent. In general, empyema is more apt to follow severe and prolonged pneumonias, although there are exceptions to this rule. Cases ending by crisis are not often followed by empyema. Sello found this only once in 34 cases. Empyema is not common after 30 years of age. Of 286 cases collected by Netter, 215 were under 30; in Sello's table 15 were under 30 and 27 under 40. Two-thirds of the empyemas tabulated by Sello were on the left side, a rather striking observation when one recalls the greater frequency of right-sided pneumonia.

The development of an empyema brings no symptoms which are characteristic. The fever of the pneumonia falls gradually, and there may be a period of complete apyrexia, varying from a few days even to a few months in duration; but, as a rule, the fever of the pneumonia passes gradually over to that of the empyema. There is no constant type of this, for the fever may be continuous, intermittent, remittent or hectic. Occasionally there is no temperature at all. Chills are exceptional. Edema of the chest wall is sometimes seen, but less often than in other forms of empyema. The meta-pneumonic empyema is peculiar in the frequency with which it ruptures into the bronchus; something like 25 per cent. of the cases do so, according to Netter. Such rupture occurs most frequently in the third or fourth week, and while it may, it does not often cause a pneumothorax. The diagnosis can be made by exploratory puncture only.

The bacteria found in the pus are most often the pneumococcus alone; less often the pneumococcus with pus cocci; next the pus cocci singly or in combination, and sometimes the fluid is sterile.

PERICARDITIS.

Pericarditis is a far less frequent clinical complication than it is an accidental post-mortem finding. The following are the statistics:

Pneumonia	Cases.	Pericarditis.	Per Cent.
Vienna	5738	27	.5
Stockholm	2616	22	.9
Basel	230	9	3.9
Wurtzburg	....	..	.54
Sello	750	7	.9

Osler found 5 in 100 autopsies; Banti in 5.4 per cent. of the autopsies, and Netter in 8 per cent. of the autopsies.

Pericarditis may be due to direct extension, or to metastasis by the blood-channels; the former is the rule. We would, therefore, expect the pericarditis to be more common with left-sided pneumonia, especially of the upper lobe, and this is a fact. Jurgensen says that in all his personal observations there was pneumonia of the left upper lobe. Dietl states that venesection has a marked influence upon the frequency of pericarditis and menin-

gitis, basing his opinion upon the following figures: in 17 fatal cases treated by venesection he found meningitis 3 times and pericarditis 5 times, while in 22 fatal cases treated with tartar emetic these occurred but once, and in 14 fatal cases treated by dietetic measures they did not occur at all. In other words, after venesection he found pericarditis in 29 per cent. of the autopsies, to contrast with the 5 to 8 per cent. found by Osler, Banti and Netter.

The difficulties in the way of clinical recognition of the pericarditis are numerous and are mainly due to the presence of the neighboring pneumonia or pleurisy. The diagnosis of the pericarditis here, as elsewhere, depends entirely upon physical signs; therefore, while there may be subjective symptoms in the way of precordial distress and pain, with an increase or prolongation of the constitutional symptoms of the pneumonia, there is nothing characteristic about these which would suggest the development of the pericarditis. When there is a pneumonic area bordering upon the heart, or a large effusion in either pleural sac, the pericardial friction is the most reliable sign. If neither of these is present, the diagnosis is easily made by the physical signs common and usually marked in pericarditis.

The appearance of the pericarditis is always a very serious matter, for it has a marked effect upon the mortality, the patients dying either from the severity of the pneumonic process or from cardiac insufficiency. The amount and character of the exudate is not a matter of indifference, for most of the cases which recover are examples of dry pericarditis. If the patient survives the acute stage, we find exactly the same general condition seen in the pleurisy, the only difference being in the physical findings. If there is fluid in the pericardium, it may be either serous or purulent, and here, as with the pleurisy, if the signs of fluid persist for any length of time, no matter whether they are accompanied by constitutional symptoms or not, exploratory puncture of the pericardium should be made to determine the character of the fluid.

In the third, or toxic, group of complications we include those complications mainly nervous and renal which are apparently not due to direct infection by the pneumococcus, and for which the fever per se does not sufficiently account. Many of these were formerly referred to the increase in temperature, but the often marked disproportion between their intensity and that of the temperature has led to the theory that they and the fever are different results of a common factor.

Certain nervous symptoms are common in pneumonia, and it is only when present in an unusual degree that they need attract attention as complications. In children pneumonia, like other infectious diseases, frequently begins with general or local convulsions. Such an onset, especially when combined with vomiting and marked stiffness of the neck, is alarmingly suggestive of meningitis. Such symptoms of cerebral irritation are not common in adults, in whom it is shown by delirium. Delirium is a common manifestation of pneumonia, and varies in type from a low muttering delirium to one of wildest excitement. There are certain factors which predispose to the development of delirium. There can be no doubt of the fact that this and other cerebral symptoms are more marked when the pneumonia is in the upper lobe. Heinze, in 317 cases of pneumonia, had 98 with severe nervous symptoms, and of these 40.17 per cent. had pneumonia limited to the upper lobe, and 25.5 per cent. limited to the lower lobe. It is not plain why upper-lobe pneumonias should be more often delirious than others, but it has been suggested that the infiltrated and swollen upper lobes press upon the veins returning the blood from the brain. In this way the nutrition of the cells is lowered, and they are exposed to more intense action of the toxins in the circulating blood. Anemic or debilitated individuals are prone to delirium, because of the more easily disturbed equilibrium of the poorly-nourished brain-cells. This is the explanation of the greater frequency of delirium in cases treated by venesection. Alcohol, also, is an important factor in the development of delirium, which in these cases does not differ from the common delirium tremens. The frequency depends entirely upon the class of the patient. Huss puts it at 6.9 per cent. of the cases, while in 5738 cases from Vienna only .9 per cent. showed it. Aufrecht had 5.3 per cent. The 100 cases previously referred to as tabulated by me in 1893 make a still worse showing, with 9 per cent.

A far less frequent nervous manifestation is the occurrence of cerebral palsy, hemiplegia, monoplegia and aphasia. I do not here refer to such cases as are due to organic lesions, such as hemorrhage, softening or meningitis, but to those cases in which the transient course or the negative post-mortem findings prove the absence of an organic lesion in the ordinary sense of the term. Numerous instances of such paralyses have been recorded by Huxham, Lépine, Macario, Stephan, Charcot, Chantemesse, Aufrecht and others. Most of these have been in patients past 60 years; in 20 of 28 cases collected by Boulloche, but still there are numerous instances in adults and even in young children. Such a paralysis may come on at any time during the course of pneumonia. It may, indeed, precede the lung changes, but, as a rule, comes on during the second or third day of the disease, which may be severe or mild. The paralysis may come on suddenly without premonitory signs, but is often preceded by headache, fullness, formication over the area later paralyzed, or there may be, as in the cases reported by Moizard, Jacksonian convulsions. The paralysis takes the form of a hemiplegia or monoplegia, or there may be aphasia with paralysis of the face and arms. Accompanying the paralysis there may be delirium or coma, and Cheyne-Stokes respiration, with weak and irregular pulse. The paralysis exactly resembles the common form, except in its course. The symptoms all disappear in the course of a few hours or days.

The explanation of these cases is not clear. Lépine, believing that these pneumonic paralyses occurred only in the aged, referred them to atheromatous changes in the cerebral blood-vessels with resultant circulatory disturbances, merely precipitated by the pneumonia. Stephan, because of the examples of this form of paralysis in adults and children, whose vessels were not atheromatous, discarded Lépine's explanation, and referred them to the effects of the pneumotoxins upon the brain-cells or their circulation, comparing them to the monoplegias and hemiplegias sometimes seen in uremia, and not due to demonstrable anatomical lesions. Atheroma, high temperature, malnutrition and heart weakness are merely adjuvant causes.

All authors agree that this complication occurs most often with pneumonia of the upper lobes. Aufrecht believes that the pneumonia of the upper lobe, by lessening the influence of the negative respiratory pressure of the thorax, retards the return-flow of the blood from the brain, and leads to the development of cerebral edema, which may be partial and cause a hemiphlegia or a monoplegia.

The following case is an interesting example of such a monoplegia:

CASE 10.—E. S., aged 2½ years, was seen with Dr. Urheim, May 22, 1899, after a few days of illness of indefinite character. He had a temperature ranging about 103, with swelling of the glands of the neck; no vomiting nor eruption. May 24, a small patch, half an inch in diameter, appeared on one tonsil. No culture was made. One thousand units of antitoxin was given. The throat cleared up, but the temperature continued, reaching 105 on the 26th. About this time retraction of the head and rigidity of the neck were noted. The child was conscious at this time, taking nourishment freely and retaining it. Pulse was strong, but rapid. On May 27, there suddenly developed a complete paralysis of the left arm; no paralyses elsewhere; no disturbance of the sensorium except stupor; no convulsions; pupils equal and reactive to light. When seen by me May 30, paralysis of the left arm had completely disappeared; the neck was less stiff, the head not retracted, there were no paralyses, sensorium was free, and there was consolidation of the right upper lobe. Temperature per rectum was 100.9. Examination was otherwise negative. The child made a complete recovery.

RENAL COMPLICATIONS.

Albuminuria is of frequent occurrence in the course of pneumonia. Jurgensen states that daily examination of the urine would probably show the presence of albuminuria in all cases. More definite statements are made by the following:

	Cases.	Per Cent.
Fraenkel and Reiche..	956	albuminuria in 42.6
Rosenstein	130	albuminuria in 23.1
Crämer	66	albuminuria in 44.9
Stortz	259	albuminuria in 42.5
Bleuler	121	albuminuria in 52.1

The frequency varies in different groups of cases. The age of the patient is of influence, as is shown by the table of Fraenkel and Reiche, who found albuminuria much less frequent in children than in adults. It is influenced, also, by the extent of the pneumonia, increasing in frequency with the extent. One lobe showed 38.8 per cent.; two lobes, 53.9 per cent.; three or more, 54.1 per cent. Of 175 fatal cases, 60.57 per cent. showed albuminuria; 36.5 per cent. of 535 cases ending by crisis, and 43.9 per cent. of 240 cases ending by lysis. The character of the epidemic also has a marked influence upon the frequency, and this, I believe, will account for the marked difference in the percentage given by different authorities. Hyaline and granular casts are very often found associated with the albuminuria, but definite figures as to their frequency could not be found. Authorities agree, however, in the opinion that these are not to be interpreted as due to an accompanying nephritis, but are the result of degenerative changes in the kidney.

The line between such cases of albuminuria of this class and a true nephritis can not be a sharp one, but the criterion of Aufrecht, while not exact, is practical. The urinary changes due to simple renal degeneration should disappear within three or four days after the crisis, and if they persist longer they may be regarded as due to a complicating nephritis. That nephritis is by no means a common complication is shown by the following table:

	Cases.	Nephritis.	Per Cent.
Vienna	5738	66	1.2
Stockholm	2616	52	2.0
Zurich	500	13	2.6
Fraenkel and Reiche...	956	6	.53
Wagner	150	4	2.6
Rosenstein	130	3	1.7
Aufrecht	1501	16	1.0

Personally in 100 cases I found one acute nephritis and one acute exacerbation of the chronic. This makes 11,690 cases, with 160 cases of nephritis, i. e., 1.4 per cent.

The older explanation that the renal changes are due to temperature must be given up, because there is no relation between the fever and the albuminuria. The current theories are that they are due either to the action of toxic bodies formed by the pneumococcus, or to direct action of the cocci excreted through the kidney. The changes found post-mortem in most cases exactly resemble those found after intoxication with certain inorganic bodies, and in other infectious diseases where they are believed to be toxic. However, numerous authors have demonstrated the pneumococci in the kidneys. Fraenkel and Reiche found them in 22 of 26 cases examined for this purpose. It seems probable that both theories are correct.

Nephritis may appear at any time during the course of the pneumonia, or may precede or follow it. It has no manifest effect upon the evolution of the disease, and does not, as a rule, cause any symptoms other than the urinary changes. Réndu reports a case of pneumonia complicated by nephritis in which the critical polyuria failed to appear when the pneumonia ended by crisis. Uremic symptoms are rare, but occasionally headache, insomnia and vomiting are seen. Edema, local or general, occurs, but it is exceptional. The nephritis is, then, feared not because of any symptoms which it causes, but because it is an expression of an intense infection or intoxication. Wagner notes the frequent splenic tumor, the early heart weakness and marked nervous symptoms as an expression of this same intoxication.

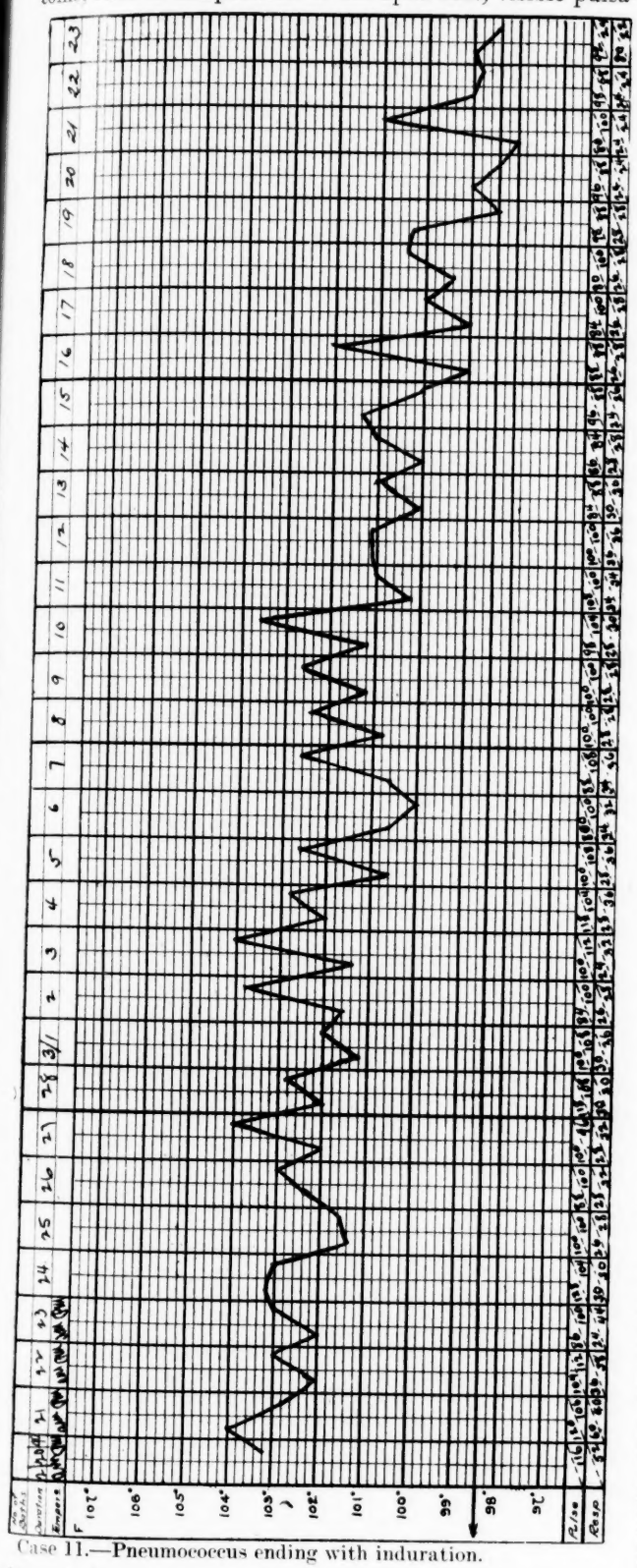
The prognosis is grave. Nauwerk lost 7 of 14 cases. Of Fraenkel and Reiche's 6 cases, 2 recovered, one disappeared, and 3 were discharged with nephritis, and one of these died ten months later of nephritis. The cases last for a few weeks to months, and end either in recovery or death, with an occasional exception in which the nephritis becomes chronic. Leyden, Fraenkel and Reiche, and Eisenlohr each report one instance of this.

The list of abnormal outcomes or sequelæ of pneumonia is not so long, and will include only the delayed resolution and induration, abscess and gangrene.

Sometimes after pneumonia has ended either by crisis or lysis and the constitutional symptoms have disappeared, examination shows that the lung has undergone no change; the patient may continue to improve and the lung remain unchanged for weeks and even months, and then gradually undergo resolution. There is no sharp line between these relatively favorable cases of delayed resolution and the much more serious cases of organization and induration. The cases of induration are characterized by three groups of symptoms: 1, continuation of the temperature; 2, the persistence of the signs of consolidation of the lung, and, 3, the gradually increasing deformity of the chest, due to the retraction of the forming fibrous tissue. The fever of the pneumonia passes gradually over into a prolonged and atypical even hectic fever, which persists for weeks or months, and is accompanied by all the constitutional and nutritional symptoms resulting from such a fever, irrespective of its cause. The cough continues, and the expectorate gradually loses its pneumonic character and becomes mucopurulent. Examination of the chest shows the persistence of the signs of infiltration of the lung, and gradually there are added to these the changes resulting from retraction. Usually one does not wait long for the latter. Personally, I have seen but three instances of such post-pneumonic induration, and in all the signs of retraction began to appear within the first month.

The changes resulting from retraction require only the briefest description, for they do not differ from those seen in cases of retraction from other causes. The affected side becomes smaller, with narrowing of the intercostal spaces and curvature of the spine. The res-

piratory movements are lessened; the mediastinum and its organs are dislocated, leading to a variety of symptoms, such as malposition of the apex-beat, visible pulsa-



Case 11.—Pneumococcus ending with induration.

tion of the pulmonary artery, and closure of the pulmonary valve.

Induration is not a common outcome, and probably the figure of Sello, who places it at 2.1 per cent., is too high. The causes for its occurrence are not definitely known, but it has been referred to senility, alcoholism, general debility, and other indefinite causes. Fraenkel thinks that there may be some bacterial influence at work. Laennec referred it to venesection, and Aufrecht agrees that this has some influence. Marchand believes that a previous pneumonia which has not entirely disappeared or has left behind pleural adhesions with subpleural thickening is responsible for most cases, and it is a fact that most cases, but not all, show pleural adhesion. Such adhesions increase the flow of blood to the parts and, at the same time, by lessening respiratory movements favor the organization of the exudate. Kahlden agrees with this, and notes that in cases of this sort the alveoli seem to contain a larger amount of fibrin than is ordinarily present.

Case 11.—J. J., colored, was seen Feb. 20, 1899. His family and personal history were good. He had had no previous pneumonia. About two weeks before he had had a severe chill, followed by fever, with cough and shortness of breath; nausea, vomiting and anorexia.

Examination showed a well-developed and intelligent negro, with left chest normal; heart negative. Right chest: From the third dorsal spine to the fifth rib in the nipple line was an area of more intense dulness. There was no vocal fremitus over this area, but there was very distinct bronchial breathing. Pulse was 120; temperature 103; respiration 44. The dulness and resistance over the right chest were so marked that in spite of the distinct bronchial breathing and the voice sounds, the exploring needle was used, but without result. The course of the temperature, pulse and respiration are shown by the curve. The physical signs in the chest did not change, but after three weeks stinking sputum appeared, and after lasting a few days disappeared. About this time it became apparent that the right side of the chest was decreasing in size, and this became more and more marked until at the time of discharge there was a very manifest difference.

This case presents the ordinary clinical history of an induration, continuation of the fever, persistence of the signs of consolidation, and later, retraction of the affected side. The intense dulness and resistance in the early stages suggest that there were here the scars of an old pleurisy, and that this case supports the idea of Marchand and Kahlden that such a pleurisy favors the organism of a pneumonic exudate.

Abscess of the lung is an infrequent happening. Aufrecht found 3 in 253 autopsies, i. e., 1.2 per cent. Sello found 11 in 750 cases, i. e., 1.5 per cent. The abscess may be single or multiple, and is usually small. They are more common in the upper than in the lower lobe, and more often left than right. All debilitating conditions, malnutrition, alcoholism and senility, are said to favor the formation of such abscesses. It seems probable that in all cases the abscess formation is due not to the pneumococcus, but to a coincident infection with the common pyogenic organisms.

The cases are characterized clinically by the continuation of the fever, which presents the characteristics of a pus temperature, or there may be a period of apyrexia lasting a week or two, and ending with chill, followed by fever. Resolution is delayed. These are often the only clinical manifestations, and since there is nothing here which more than suggests an abscess, the diagnosis is often impossible. The diagnosis can be made only on the appearance of the characteristic sputum. The sputum gradually changes from pneumonic to mucopurulent or to pure pus. In some instances the change takes place suddenly, with a sudden expectoration of considerable amount of pus. Sello, in his 11 cases found 2 in which the sputum remained pneumonic. Both of these died and the diagnosis was made in the dead-house. In 4 the fluid was mucopurulent, and in 5 pure pus. Only once did he find the green sputum described by Traube. The sputum from an abscess contains pus corpuscles, shreds of pulmonary tissue and elastic fibers, with crystals of cholesterin and hematoidin and bacteria, and has the odor of pus. Diagnosis of the site of the abscess is

usually impossible, but if cavity signs appear in such a case, the diagnosis of the site can be made. Rupture into the pleural cavity occurs frequently, causing an empyema or a pyopneumothorax. If death does not result, the course of the abscess is prolonged; recovery may occur.

Gangrene occurs even less often than the abscess. Grisolle found no instance of it in 305 cases of pneumonia, and in 70 cases of pulmonary gangrene only 5 were referred to pneumonia. Sello found 3 examples in 750 cases, i.e., 0.4 per cent.; Aufrecht none in 1501. The course of the pneumonia is not modified in any characteristic way by the development of the gangrene, and here, as with the abscess, the diagnosis rests upon the change in the character of the sputum. The sputum becomes thinner and gradually changes through the browns to the color of prune juice, and at the same time takes on the terribly stinking odor of gangrenous parts. It contains shreds of tissue, elastic fibers, cells, crystals and bacteria.

Other sequelæ, such as neuritis, tetany, chorea, and psychoses, occur, but so infrequently as to need nothing more than mere mention.

BIBLIOGRAPHY.

Aufrecht: Nothnagel System, xiv, ii.
Ball: Med. News. 1895, 61.
Banti: Centb. f. Bak. 1896, xx, 849.
Brunner: Cor. Blat. f. Schweiz, Aerzt. 1892, xxii, 329.
Carré: Gaz. hebd. 1888.
Cary: Amer. Med. and Surg. Bull. 1896. x, 507.
Caussade: Bull. Soc. Anat. de Paris. 1895, 70, 239.
Chantemesse: Bull. et mem. de Soc. med. de hôp. 1893, 10, 875.
Da Costa: Phil. Med. Jour. 1898, ii, 519.
Duplocq: Bull. et mem. soc. med. d. hôp. 1897, xiv.
Eisenlohr: Deut. Med. Wchnschft. 1892, 723.
Fiesch: Berl. Klin. Wchn. 1892, No. 48.
Fiessinger: Rev. gen. d. clin. et d. Therap. 1897, xi, 594.
Fischer: N. Y. Med. Jour. 1897, 46, 255.
Fraenkel, A.: Deut. Med. Wchnschft. 1895, 153.
E. Fraenkel u. Reiche: Zeit. f. Klin. Med. 1894, 25.
Gilbert and Grenet: Compt. rend. soc. d. biol. 1898, 10, 992.
Gilbert and Grenet: Arch. gen. d. Med. 1899.
Gubler: Arch. gen. d. Med. 5th series. xvi, xvii.
Guinon: Gaz. d. hôp. 1896, 69, 280.
Holdheim: Deut. Med. Wchnschft. 1896, 85.
Japha: Deut. Arch. Klin. Med. 1898, 62, 177.
Juergensen: vii, Ziemssen System.
Kahlden: Zeigler's Beiträge. xi.
Kahlden: Zeigler's Beiträge. 1893, xiii, 279.
Kahlden: Cbl. für allgem. Pathologie. 1897, 561.
Katz: Deut. Med. Wchnschft. 1897, 23, 436, 855.
Leszynsky: N. Y. Med. Jour. 1896, 63.
Maladies de l'enfance. Grancher, Comby et Marfau. Tome iv, 99.
Moizard: Jour. d. Med. et chir. Prat. 1896, 67, 689.
Mommsen: Deut. Med. Wchnschft. 1879, 467.
Nauwerck: Zeigler's Beiträge, i.
Netter: Compt. rend. d. Soc. d. biol. 1889 and 1890.
Netter: Arch. d. physiologie. 1886, 8, 106.
Netter: Arch. gen. d. Med. 1887, Mar.
Nothnagel: Volkmann's Vorträge. 66.
Ortman: u. Samter Virch. Arch. 120. Hft. i.
Page: Med. News. 1895, 66, 377.
Pearce: Bost. Med. and Surg. Jour. 137, 561.
Pétro: Gaz. hebd. 1897, 853.
Potain: Med. Week. 1897, v, 471.
Powell: Brit. M. J. Nov., 1895.
Queyrat: Gaz. d. hôp. 1892, 657.
Rasch: Hospital Tidende. 1893, Nos. 18 and 20.
Rendu: Semain. Med. 1888, 165.
Sello: Zeitschrift für Klin. Med. 1898, 36, 112.
Vogelius: Arch. d. Med. Exper. et d'anat. path. 1896, viii, 186.
Wagner, E.: Deut. Med. Wchnschft. 1883, 33, 441.
Wagner: Deut. Archiv. Klin. Med. xxv.
Weichselbaum: C bl. für Bak, 1897, 2, 213.

DISCUSSION ON PNEUMONIA.*

DR. J. H. MUSSER of Philadelphia—I do not feel qualified to open this important and serious subject, which has been thoroughly discussed by the readers of the various papers, without more reflection, but in the absence of those to whom it has been assigned I can not shirk the duty. Pneumonia has been taken out of the catagory of lung diseases and is now considered an infection. I suppose we shall have to continue the use of the term pneumonia, but as we near the time of improved pathology it would be better to associate pneumonia with the term "pneumococcus infection." For certainly it is an infection; long before bacteriology came to our assistance we were satisfied that pneumonia was not a local but a systemic disease, from the clinical course. The chill, fever, possibly vomiting, rapid pulse, alteration in the respiration rate, and the leucocytosis—the occurrence of all these symptoms, before physical signs can be made out, indicate that an intense general process is present. Because of the few physical signs it was called pneumonia. Although we often could not make out the physical signs during life, at autopsy we may find small portions of the lung the seat of the consolidation. Pneumococcus infection it should be called.

It is not necessary for me to refer again either to the course of the disease, its clinical history or to the manifestations of this infection. I shall refer to one or two points: 1. To the form of pneumococcus infection beginning with abdominal symptoms; there are many cases of this character. Chill, fever, vomiting and abdominal pain are present, the pain localized, probably, over the upper half of the abdomen, and often again localized in the portion of the abdomen where the appendix lies. Indeed, in one instance the patient was supposed to be suffering from appendicitis. In a large majority of cases, however, the tenderness and great pain in the upper half of the abdomen are very misleading. One must not be misled by the severity of this infectious process.

Again, too much stress can not be laid on the occurrence of pericarditis during the course of the pneumonia; it is often overlooked because of the insidious development of the complication. Without pain, but with only an increase in the pulse-rate, we are feebly warned of the development of this associated process. As has well been stated, the physical signs alone enable us to distinguish pericardial infection. I wish, however, to lay stress on the importance of watching the pericardium, noting the physical signs there, for in the large majority of instances, it is too late when we first learn of this complication by symptoms of great effusion when operative measures must be resorted to.

There are a few other complications that have not been referred to. Meningitis has been considered, and also the intoxication symptoms. One word further in regard to pleural effusion or empyema. Dr. Preble called attention to the localized areas in the pleura; such areas may be confusing, and we can not determine whether small empyemas may be present. I rely on the locality of the physical signs which indicate fluid in the pleural cavity. If I have physical signs, even if small, along the margins of the lobes, absent fremitus and breathing signs, and with these a continuation of the fever, I look out for the occurrence of infection. This may be between the lobes of the lungs, pointing toward the surface.

In regard to the treatment of pneumonia I shall say but little. I approach no subject with any greater embarrassment than this one of the treatment of pneumonia. I can not tell you how to treat it. Dr. Hare[1] has pointed out that we can not have any "cut and dried rules" regarding it. I feel that all of us should formulate to ourselves what to do in cases of pneumococcus infection. Notwithstanding the fact that this disease should be taken out of the category of lung diseases and included among the infections, still I am convinced that cupping is of great value; cup freely and continuously. I cup in the morning, in the evening, and again during the next day. I repeat the cupping around the areas I believe to be the seat of the consolidation. Following this I am satisfied of the value of cold compresses applied during the course of the disease as insisted on by Baruch. I need not tell you why. These compresses are wrung out of ice-water and applied during the course of the fever. This is especially of value where the temperature is above 102 degrees, and where there is general infection and marked evidence of toxemia; otherwise the compresses are not indicated. Bear in mind, I do not apply these compresses because of their effect on the lung alone, but because of their effect on the heart, the general circulation and nervous system. I am satisfied that the toxic symptoms are controlled by the local applications of cold and it is better to apply these in bed rather than by means of the cold bath out of bed. Cold sponging may be used in addition. In regard to the remedial remedies I know of no specific. I have never given aconite or veratrum viride, nor have I found it necessary to use cardiac sedatives. I look toward establishing proper eliminations as well as possible by the use of marked laxatives and mild diuretics and diaphoretics. I use large quantities of water internally. I do not fear systemic intoxication in typhoid fever or any infectious disease if I keep the kidneys freely acting: as long as the kidneys are acting and there is passed 50, 60 or 80

* The other papers of the Symposium on Pneumonia appeared in the JOURNAL August 19.

[1] Dr. Hare's paper having been published elsewhere, an abstract appeared in the JOURNAL, July 29, p. 274, ¶ 28.

ounces a day, I then feel satisfied that the heart is acting all right, the tongue will not become dry, and the so-called typhoid state will not develop. The action of the kidneys is encouraged by simple measures. Of the drugs, we use strychnin and nitroglycerin during the course of the pneumonia, especially during the later stages. With digitalis I have had but little experience. I am doubtful as to its efficaciousness.

DR. CHARLES G. STOCKTON, Buffalo—I have had a case that confirms the position taken by Dr. Stengel, that leucocytosis does not mean that the case will result fatally in pneumonia. In my case there were not more than 6000 leucocytes to the cubic millimeter, and the case recovered; this seemed to be quite extraordinary in view of the fact that it was a case of relapsing pneumonia, the only one I have ever seen. It was lobar pneumonia and the child had three relapses. The late Dr. Flint said that this disease had no relapses; it is very extraordinary.

There is another point about the general question that is very interesting: I have stated to my classes that the patient may die of lobar pneumonia without having inflammation of the lungs. I have never seen such a case, but I have seen two cases approaching death where no pneumonia could be discovered. One case died of lobar pneumonia and showed no evidences of any pneumonia until the sixth day, and he died on the seventh day. That was a case of toxemia; that man was like one bitten by a serpent. There was vasomotor paresis and evidence of the most serious processes in operation, but death occurred in the beginning of the inflammation. I think that toxemia is the question that concerns us in the treatment of pneumonia, and wish again to emphasize the fact that lobar pneumonia is a toxic disease, and the treatment should oppose the toxic condition. Why is Dr. Hare careful in the use of stimulants at certain times? He warns us against whipping up the heart too early in the disease. This brings us to a state of timidity when the stimulants are needed. If we have to deal with a patient whose blood is loaded with poisons we would try to eliminate these poisons; a proper amount would be withdrawn and a saline solution introduced. Why not give calomel? I believe that calomel in large doses is of more importance at certain junctures than any one remedy. It should be used to stimulate the liver and to rid the organism of pathogenic bacteria, as Fütterer has taught us, as well as their toxalbumins.

Cardiac failure and edema of the lungs, which mean toxemia, constitute the real danger in this disease. Therefore, we should use strychnin. Strychnin should be used in 1/15-1/20, if needed, in 1/10 grain doses hypodermically, and it should be given until there is no longer vasomotor paresis. There is no doubt that patients will be rescued when any other means would have been futile. If the patient show much excitement from the large doses of strychnin, the use of small amounts of opium will control the irritability.

DR. GEORGE DOCK, Ann Arbor, Mich.—So many valuable papers have been read, and so much has already been brought out in the discussion, that I can hardly do more than reiterate or criticize some of the statements already made. In no other disease is a knowledge of the natural course of the untreated disease more instructive, and I agree with the advice of Dr. Hare in regard to the duty of the physician as a watchman in dealing with pneumonia. I wish to add my voice to the value of strychnin in the later stages of pneumonia, given judiciously, and also to the value of calomel. I often find the latter useful toward the end of the acute stage. I wish especially to speak of the use of ice-bags in the treatment of frank, croupous pneumonia. I see many such cases in country people of good habits and constitution, and in previously healthy students. Formerly I treated these cases with the cold bath, but this is more difficult to carry out in pneumonia than it is in typhoid fever, and so I was especially glad to find the results with the ice-bag quite as good. A few patients were seen early, and in many the temperature ran high, with breathing rapid, with a good deal of pain, etc. For the latter I formerly used hypodermic injections of morphin. Now the application of the ice-bags quickly relieves the pain, the respiration soon becomes slower and the patient feels greatly improved. The ice-bag is usually applied over the consolidations, and the ice may be mixed with bran if the patient be a weak child or woman. In many parts of the country patients are still treated by hot poultices or the cotton jacket. The heat does not relieve the patient so quickly as cold in most cases. In speaking of the treatment of pneumonia, there is another point that is not borne in mind as it should be, viz., watching the condition of the pleura. In all cases of pneumonia careful examination of the chest should be made for areas of dulness and absent fremitus; and, in doubt, the aspirating needle should be used freely but with proper care. Dr. Preble pointed out the importance of this matter, and I wish to reiterate what he has said. A fairly good-sized needle should be used. It is also important to make a bacteriologic examination of the fluid for the purpose of finding out the character of the germs present, whether diplococcocus, streptococcus, etc., since this assists us in prognosis and in deciding whether a radical operation is necessary or not.

DR. A. M. HOLMES of Denver, Colo.—I might say a word or two in reference to altitude. For several years I have had the good fortune to live in Denver. At an altitude of about one mile above us and 100 miles from us we have the celebrated Cripple Creek district. At this point there is a great increase in population, it being a new settlement, and there is a great deal of exposure and pneumonia. The mortality rate at this point is exceedingly high. It is customary to send patients to a lower altitude as soon as the diagnosis of pneumonia can be made.

DR. J. M. ANDERS, Philadelphia—The subject which now engages the attention of this Section is one of paramount importance, and every aspect seems to have been touched on. It has been shown recently, by Drs. Wells and Folson, that while the death-rate from typhoid fever, diphtheria, tuberculosis, and other infectious diseases has been decreasing, that of pneumonia has been rather rapidly increasing in recent years. In a disease that prevails so extensively as does lobar pneumonia, this fact corroborates the view expressed by Dr. Wells as to the extreme importance of the subject.

It is now the generally accepted view that lobar pneumonia is due to various cocci, but that the pneumococcus is found in about 90 per cent. of the cases, and it is the only organism present in about 75 per cent. of the cases. Now the special etiology is known to decidedly influence the course of the disease, and to have a bearing on the prognosis. For these reasons it is of the utmost importance that more accurate methods of diagnosis than are now in vogue should be applied to this affection. In short, a bacteriologic diagnosis should be made whenever practicable, for prognostic and therapeutic reasons. Thus the course is apt to be more prolonged, and the prognosis more unfavorable in a streptococcic lobar pneumonia than in a diplococcic pneumonia. The streptococcic variety is more commonly met with in persons previously debilitated by chronic disease than the diplococcic variety, according to my experience.

Again, if it is ever hoped to employ the antipneumococcic serum in a rational way in the treatment of lobar pneumonia, a bacteriologic diagnosis is imperatively demanded. Antipneumococcic serum can not be expected to give good results in a streptococcic pneumonia, nor yet in cases of mixed infection. For the obvious reasons that I have adduced, a plea for the general adoption of an accurate bacteriologic examination for all cases of pneumonia is both timely and important.

The aspect of the question considered by Dr. Stengel is an interesting one. According to my observation and experience, moderate leucocytsis is the rule; only rarely does the count rise to 50,000 white cells to the cubic millimeter. I have always found it to persist during the pseudocrisis that is so apt to occur on the fifth day, but it also rarely persists for hours, or even a whole day, after the true crisis. This is especially apt to occur in cases in which the resolution is delayed, and those due to the streptococcus alone, or a mixed infection with the streptococcus.

The cases of relapsing pneumonia, a subject to which Dr. Stockton referred, are of lively interest, although rare. During the past winter I attended a male, aged 23, suffering from double lobular pneumonia complicating influenza; he had nearly recovered when he developed a relapse, which, however, affected only one side. Full recovery ensued after a prolonged illness. In this case Prof. McFarland examined the sputum, and failed to find the pneumococcus or any other recognized pathogenic organism. It is probable that the relapsing cases are due to some other, as yet unknown, organism than the pneumococcus.

Since lobar pneumonia has been regarded as an acute infectious disease, its real nature and dangers have come to be better appreciated. The true element of danger is the toxemia and septicemia. But the fact should not be lost sight of that there is, in pneumonia, oftentimes a mechanical hindrance to respiration and circulation. This is particularly true of the function of respiration and circulation. This is particularly true of the function of respiration after the heart begins to fail, and after collateral edema and congestion appear in the lungs.

The treatment of pneumonia has been ably discussed. There is no treatment for pneumonia, but there is for the individual case. I heartily approve of the division of the cases into sthenic and asthenic groups, since the treatment of the former should be different from that of the latter. Sthenic cases are commonly met with in the country, while, according to my ex-

perience, they are comparatively rare in cities, particularly in our large general hospitals. In dynamic, or sthenic cases, it is sound practice to resort to blood-letting in the stage of engorgement. This lowers arterial tension, allays the nervous excitement, greatly relieves the pain, and, finally, directly removes a portion of the burden from the heart, without robbing it of much of its power. Cardiac sedatives, as veratum viride, fulfil the same indications as blood-letting, but they do so at the expense of cardiac power, and the same is not true, to the same extent, at least, of venesection. In the asthenic type of pneumonia, during the stage of congestion, morphin is to be used; this guards the heart, relieves the pain, and at the same time gives comfort and rest to the patient Leeching, or local blood-letting, withdrawing from six to eight ounces of blood from the side, are measures that may be combined with the use of morphin. It is hard to explain, on physiologic premises, the effect of the local abstraction of blood, but it does diminish arterial tension and nervous excitement, and gives relief from pain. Asthenic cases do well under blood-letting and the application of cold compresses to the chest.

During the second stage of pneumonia the treatment should be sustentative and supportive. In cases of adynamic pneumonia, alcohol must be given sooner or later; the condition of the pulmonic second sound of the heart, the blood-pressure, and the pulse should be our guide in the administration of alcohol. Strychnin should be always employed when alcohol fails, and where there is threatened collapse; it should be administered hypodermically, and not be withdrawn, but continued in smaller dosage until convalescence is reached. Turpentin should be tried in cases of delayed resolution. I can not tell you how it acts in these cases, but it sometimes exerts a good effect.

DR. H. B. FAVILL, Chicago—My experience in the past affords me abundant proof that Dr. Billings, the chairman, has never an intention to be unkind to me. My position on this program, however, and the fact that I consented to be put on the program, suggests to me the experience of the country boy with the yoke of steers. Those of you who have encountered the mysteries of a log chain and a yoke of steers, know what is meant by a "toggle." The boy, whose chain had importunely broken, slipped one link through another, and used his finger for a "toggle." The lack of correspondence between his judgment and his zeal is eloquently set forth in his comment. "I seen my mistake the minute the steers straightened." When I saw from one glance at the program, that my enthusiasm had caused me to be made to follow such a list of masters in medicine, I felt for that boy. The gentlemen who have preceded me have all admitted that everything has been said, and that nothing more is to be said, with which I agree, and, like them, I shall probably take my full allotment of time.

The fact that impresses me more strongly the longer I think about it, is the correctness of the conception of our predecessors of pneumonia as "lung fever." For several years now we have abandoned the latter idea of "inflammation of the lungs," and have regarded the process, the symptoms, the dangers as those of toxemia, and have held the local considerations as subordinate thereto. A still broader grasp of the facts as we reach them, involves the conception of pneumonia as a septicemia of pneumococcus origin. To what extent it is always so general is, for the present, doubtful. That very often it is distinctly so, admits of no question. The place to study pneumococcus infection is in the child. There it manifests its variety and versatility in great intensity, often with the minimum of local developments.

I call your attention to the protean aspects of an infection in which the developments in throat, ear, lung and brain present a shifting picture of confused and inseparable symptoms, which must utterly dismiss the anatomic diagnosis. The tardiness of development of local evidence, the rapidity of evolution, the marked tendency to shift, the masking of crisis by "lapped" developments, but, characterizing all its phases, the tendency to *crisis*, mark a most significant septic process, whose local accidents have many *names*. Unfortunately, these names are to the practitioner a stumbling-block and a hindrance. When shall we escape? What happens in the adult is less picturesque and less frequent, but frequent enough to greatly enlarge our ideas as to the septic possibilities of pneumonia.

When one considers the confusion resulting from the coincidence of streptococcus infection, and the impossibility of diagnosticating with our present knowledge the relative value in a septic case, one must long for the day of rational classification.

I am very much of the opinion expressed by Dr. Stockton as to the value of strychnia in treatment. To regard its use as an extreme measure of stimulation is, I am sure, to overlook its well-demonstrated supportive and steadying power. To use it to the extent of putting the nervous system on a "wire edge," is to use it injudiciously in the early stages. Its management is much broader than that.

Time will furnish the experience necessary to determine the best use of cold water baths in pneumonia. On this point I am not clear, but I am quite convinced that they have a great value and present no contraindication from the mere element of cold or wet. Just how best to utilize the sedative, tonic, and eliminative qualities may not be established, but the future will give hydrotherapy a prominent place in treatment.

DR. EDWARD F. WELLS, Chicago—In the twenty minutes allowed me in the reading of my paper, I endeavored to present as clearly and concisely as possible those features of pneumonia, which, in my opinion, are of the greatest present interest and importance. Necessarily, in such a brief period only a little of the results of history, observation, analysis and speculation, as they concern the subject of pneumonia, has been told, and the discussion has brought out the fact, and it is one of the first importance, that I failed to sufficiently emphasize the point that primarily pneumonia is a local affection—the facts at hand lead irresistibly to this conclusion. Pneumonia is not a general disease with a local manifestation. At the expense of partial repetition, allow me to restate, a little more fully, this proposition: Pneumonia is an acute infectious disease of bacterial origin; the essential cause of the malady is the pneumococcus; this micro-organism incites the pulmonary inflammation; and the general symptoms depend, for the most part, on a toxemia due to the introduction into the general circulation of pneumococcal toxins. Primarily the affection is a local one, but many of its principal features and dangers depend on the general toxemia.

I had hoped that the subject of prophylaxis would receive elaborate treatment in the discussion, but apparently we are not quite ready to formulate opinions on this question. It is clearly the most important problem which confronts us today.

DR. H. A. HARE, Philadelphia—One of the pleasant things about a discussion of this character is that it enables us to use the complimentary terms just applied by Dr. Stockton to what I have said. I was not, however, sufficiently heard to make him understand what I meant, viz., that I believe strychnin was much abused, that it often caused, when given continuously, a rapid, thready pulse, but that in an emergency to overcome a crisis it was one of the best, if not the best, drugs to be employed, and that it ought to be given freely and hourly, but not for days at a time as a stimulant. It does not act as a supportant, but as a "whip."

AFTER-TREATMENT OF ABDOMINAL SECTIONS.*

BY C. L. BONIFIELD, M.D.
CINCINNATI, OHIO.

The fate of the vast majority of patients subjected to abdominal section is sealed when the incision is closed. Many will recover without any especial skill being required in their subsequent treatment, others are doomed to die in spite of the most judicious care that can be given them; but in some cases the result is determined by the after-treatment. The days and nights immediately following operation are, for the patient, ones of extreme discomfort. It is not unusual to hear her say: "Had I known what I must suffer, I should never have had it done." A subject that concerns the lives of some and the comfort of many of our patients seems to me to be worthy of more consideration at the hands of operators than it has received in recent years.

The indications for treatment after abdominal section are to secure reaction from shock; to arrest secondary hemorrhage should it occur; to combat sepsis, if need be; to administer proper nourishment, and to make the patient as comfortable as possible without interfering with her recovery. Ordinarily reaction from shock occurs without much assistance, wrapping the patient in warm blankets and surrounding her with hot water bags is all that is required. There can, however,

* Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

be no objection to giving 1/30 gr. of strychnin hypodermically. If the shock be more severe, normal salt solution is the best weapon with which to combat it, given per rectum, subcutaneously, or intravenously, as the urgency of the case may demand. Sulphate of spartein is of decided value as an immediate stimulant to the heart, while digitalin may be used for a more lasting effect. The physiologic action of alcohol is so nearly identical with that of ether and chloroform, that its utility is to be doubted when the system is saturated with one of these agents.

There are few surgeons of large experience, who have not one or more times found, after the patient has been put to bed, that their hemostasis is incomplete, and that it is necessary to reopen the abdomen and secure the bleeding vessel. Some one competent to do this should be within call for at least twelve hours after operation. No other treatment is to be thought of.

It is now generally recognized that the best means we have of averting or combating sepsis is free purgation. To produce this, probably most operators are in the habit of employing magnesium sulphate, or some other saline, doubtless because they have the property of abstracting water from the blood, thus causing absorption of free fluid from the peritoneal cavity—"draining the peritoneal cavity through the bowels," as it is often described. This effect is not so essential, in these days of painstaking work, when raw surfaces are covered and great care is taken to stop all bleeding, as it was formerly. But if it is desirable, it is better to first secure a movement of the bowels with some other agent, and administer salines afterward. The objections to the use of salines are that they act almost entirely by increasing secretion, stimulating peristalsis but slightly; that if they are not effective in a few hours, they will not act at all; that they can not act when the system is very deficient in fluids; that they produce dilatation of the intestines, and that their unpleasant taste frequently produces nausea from vomiting. The indication is for a purgative that acts chiefly by increasing peristalsis, thus urging flatus onward and preventing dilatation. I have experimented with numerous purgatives and combinations of purgatives, and have concluded that calomel is the most generally satisfactory. I usually give 5 grains, by itself, or with sugar of milk, dropped dry on the tongue about twenty hours after the operation. Four hours later, if there is no indication of peristalsis having been excited, the dose is repeated. This is a better way than to give it in divided doses, which, while they are not so apt to nauseate, are not so effective as a purgative, and are more apt to produce salivation. Two hours after the second dose of calomel, the administration of the solution of citrate of magnesium is begun, 2 or 3 ounces being given every hour until the bowels move or the stomach rejects it.

If there has not been much nausea, instead of the second dose of calomel a capsule of 5 grains of compound extract of colocynth is frequently given. This very efficient preparation was one of the purgatives with which I experimented most persistently. When it was retained its action was ideal, but unfortunately I found that the stomach rejected it in about 50 per cent. of the cases. Where the colocynth is given instead of the calomel, the magnesium is seldom required. The colocynth may be repeated as often as is necessary. An enema of soap-suds is usually given when the patient feels that her bowels are about to move.

If there is vomiting and distension of the abdomen, calomel is the only purgative given. If a dose of it is vomited, it is immediately followed by another. The stomach is kept absolutely empty of everything else. Persistent efforts are made to move the bowels with rectal injections every four to six hours. I have always found the Davidson more satisfactory for this purpose than the fountain syringe. I have seldom been able to pass the rectal tube above the sigmoid flexure, and when my assistants have thought they have done so, I have usually been able, with my finger in the vagina, to demonstrate that it is coiled on itself in the lower bowel.

Little benefit is to be derived from leaving a tube in the rectum for the escape of gas. It is not the sphincter that retains the gas; on the contrary, it is so high up that the tube seldom reaches it. Where relief from it is apparent, it is because peristalsis has already been started, and the relief would come a little later when the bowels move, without its assistance. Were this not true the escape of gas would be only from one loop of intestine, as it is when the bowel is punctured for the escape of gas in operating for obstruction. The tube renders the rectum intolerant, and prevents the retention of the large injections, which are the last means we have of securing a movement. When the purgatives have failed to act in forty-eight hours, and the rectum has become intolerant, the patient's condition is truly alarming. Under these circumstances every operator must have wished for a purgative that would act when injected subcutaneously, with the same certainty that apomorphin acts as an emetic when used in this way. But the pharmacologists have not yet supplied us with such an agent. The physiologic action of physostigmin, causing contraction of involuntary muscular fibers, especially contracting the intestines and causing increased secretion of various glands, would suggest its use for this purpose. And the fact that it is employed with so much success by the veterinarian in horse colic, where overdistension of the bowels is the alarming symptom, would lead us to hope for results from it. I have employed it in a few cases, but not in a sufficient number to arrive at any conclusions as to its usefulness or the proper dosage. One to two grains is the ordinary dose given a horse, so it would probably require 1/20 to 1/10 gr. for a human being, though text-books place it variously from 1/12 to 1/200 gr., some stating that the maximum dose is 1/60 gr. In experimenting with it I have been very cautious, and I believe I have not used a sufficiently large dose.

If the bowels have not moved within forty-eight hours after the commencement of the administration of purgatives, it is best to desist from all efforts to secure this result, and to devote one's energies to sustaining the patient. Oftentimes we will find that stimulants will accomplish what purgatives have failed to do. This would seem to indicate that the overdistension and paralysis of the bowels is caused by some toxic agent occurring in sepsis acting on the nervous centers in the spinal cord.

Keith and others recommended quinin by the rectum as a stimulant to the nervous system under these conditions, but in my experience full doses of strychnin hypodermically are much more efficient. The rectum should be reserved for nutrient enemata. Champagne may be tried by the mouth. If it is retained for even a very short time, enough is absorbed to produce some stimulation. When the evidences of peritonitis are unmistakable, the advisability of reopening the abdomen and flushing the peritoneal cavity with salt water is always to be considered. But usually when one can be sure that he has peritonitis to deal with, it is too late

for even this to save the patient's life, enough poison having already been absorbed to prove fatal. The immediate, though usually short-lived improvement, following its use, is, nevertheless, sufficient to justify one in resorting to it in all desperate cases. It should be done without an anesthetic, or if one is used the stomach should first be washed out. By neglecting this precaution I one time had a patient drowned in the fluid her stomach contained.

Unless the patient is unusually weak, and in need of it, all nourishment should be withheld until the bowels have moved. If any is given it should be as hot as can be swallowed. It is more stimulating, more readily absorbed, less apt to produce gaseous distension. It should be left to the patient as to whether it shall be milk and lime-water or some meat broth. Food that is distasteful is much more apt to be rejected by an irritable stomach. For a day or two after the first movement of the bowels only liquid food in small quantities can be allowed, but the quantity and variety may be rapidly increased, and at the end of the first week her diet may usually be quite generous.

The pain suffered by patients after celiotomy varies from slight discomfort to that which is excruciating and unbearable. It is most severe in those cases of salpingo-oöphorectomy where, on account of interstitial salpingitis, the stumps ligated are thick and hard to strangulate. Hysterectomies and ovariotomies for large cysts are followed by much less pain. It was formerly the custom to relieve this pain with morphin, but when the necessity for early and free purgation was recognized it was seen that the use of this drug was contraindicated. Morphin not only constipates the bowels and checks elimination in every way, but also nearly always produces more or less nausea, rendering the administration of purgatives more difficult.

I formerly adopted the usual practice of ordering that all morphin be withheld, gave my patient the not very comforting assurance that after twenty-four hours her suffering would be much less, and made my visits as few and short as possible, that I might not yield to her entreaties for relief. When at the end of twenty-four hours I observed how haggard and worn those patients were who had suffered severely, I always felt sure that had I been able to relieve their pain without producing nausea and checking elimination, they would have been in far better condition to battle against sepsis. To meet this indication I adopted the use of codein phosphate and chloral hydrate by the rectum. At both hospitals at which I work it has been a standing order for three years that if the patient suffers she shall be given such an enema; 3 grains of the codein and 30 of the chloral is a full dose for a robust woman. It may be repeated every four or six hours, if necessary. A second dose is not infrequently given, but rarely a third. The rectum absorbs fluid so readily after celiotomy that relief is surprisingly prompt. Lauder Brunton has pointed out the fact that ovarian pain may cause constipation, which is relieved by small doses of opium, and it seems probable that relieving the pain by these drugs, which are not markedly constipating in their action, may facilitate rather than retard peristalsis. At any rate my experience proves that the constipating effect, if there be any, is so slight that it may be practically disregarded.

If it is especially desirable for any reason to prevent vomiting, the enema may be given before the patient entirely recovers from the anesthetic; otherwise I have thought it advisable to wait an hour or two to give the stomach a chance to empty itself of the secretions which have been pouring into it during anesthesia.

Next to pain, the symptom that patients complain most of is thirst. If there be any fluid in the peritoneal cavity, to be absorbed, it is advised not to relieve it. It is a question whether the good to be obtained by this treatment is not counterbalanced by the general depression caused by lack of circulating fluid, and the consequent inactivity of the kidneys. I am satisfied that the withholding of fluids may be overdone. It seems rational to believe that the benefits derived from the postural drainage of Clark are more from the stimulating effect of the salt water used, than from the carrying of the infectious material to a new and healthy part of the peritoneal cavity for absorption, for Nature, in her efforts to fight infection, pursues exactly the opposite course, limiting it to as small an area as possible, by every means at her command. The best way to supply the system with the required fluid is by rectal injection of normal salt solution, a half pint being given every two to six hours. A half ounce of very hot water by the mouth may be allowed every hour after the first four. It has a tendency to settle the stomach, and it pleases the patient to get something. The nurse should frequently wipe out the mouth with a moist cloth, but the patient can not be trusted to rinse it out for herself.

In conclusion, any surgeon who does a capital operation owes it to his patient, his profession, and himself, to see that everything possible is done to secure recovery. For this reason, only when it is absolutely unavoidable, should an abdominal section be done in the country and the after-treatment left to a practitioner inexperienced in this work.

THE STUDY AND TEACHING OF OBSTETRICS.*

BY ELIZA H. ROOT, M.D.

Professor of Obstetrics, Northwestern University, Woman's Medical School; Senior Obstetrician to Wesley Hospital.

CHICAGO.

Child-bearing, though a physiologic function, is not without danger to both mother and child. Danger arises from two distinct sources. The first is external to the mother, and depends on her environment, in which her safety is menaced by infections that may occur during gestation, during labor, and during the period of lying-in. The second source of danger is internal in nature. It belongs within the woman herself, growing out of conditions that make the passage of the passenger unsafe or impossible. It finds expression in faulty physical development for which our modern methods of living are largely responsible; in faulty development of the parts concerned in parturition, and in accidents of mechanism.

The treatment of the first source of danger must be prophylactic and remedial, while that of the second must be mechanical, and includes a wide range of surgery. If a perfect prophylaxis is observed, remedial measures will fall into disuse, while a thorough knowledge of, and *training* in, methods for the second will contribute greatly to the safety of child-bearing. To make obstetrics a stepping-stone to some other branch of surgery is fatal to skillful obstetrics.

In the last ten or fifteen years obstetrics, in our country, has had a marked uplifting. Our best schools of medicine are giving the subject more attention than ever

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

before. Students are asking for more thorough work and increased facilities for practical training. In schools requiring a four years' course the subject may be profitably graded, to consist of a junior and a senior course in obstetrics. For the junior course only normal obstetrics should be taught. This insures a reasonable amount of time for drill in the fundamental principles of the subject, and lays the foundation for careful conscientious practice.

Before entering further on methods, a few words regarding qualifications essential in the teacher may not be out of place. First, the teacher must be thoroughly in love with his chosen subject and with the work of teaching. He must be a student himself, coming in close and sympathetic touch with his pupils; he must always be the interested, enthusiastic student-teacher, carrying his students with him as willing followers. In his practice of obstetrics, each case, though he may have seen hundreds of similar ones, must be studied with as undivided and careful attention as his cases in early practice. Each phase and feature, carefully observed, keeps freshly filled the store-house of experience from which he is to draw daily supplies for his pupils, and from which he must draw with a generous, unselfish mind and heart. Time is saved to teacher and student by the use of a good text-book. To instill life and interest into the recitations, the teacher amplifies the lesson out of his own experience and by demonstrations on material from the working museum.

In the first semester the student should become familiar with the obstetric pelvis, static and dynamic. Its axes and diameters, together with the diameters of the fetal head, and its conformations should be as familiar to him as the alphabet, for this knowledge forms the foundation on which he must build all future knowledge of obstetrics. The diameters of the pelvis, and its inclinations are best taught by comparisons made by means of the pelvimeter. The student should make the measurements, first on the dry pelvis, and then on the pelvis of the living subject. He learns to use the pelvimeter, of its advantages and its disadvantages, and obtains a comprehensive idea of differences in the pelvis compatible and also incompatible with safe and normal labor. He should systematically learn the steps taken in abdominal palpation, and should be firmly impressed with the importance of this means of reaching a diagnosis, making the vaginal route a secondary step, not in importance but in order. Before entering on the study of obstetrics, work in embryology prepares the student to readily distinguish the clinical features, diagnostic of the age of gestation at which the embryo and fetus was expelled or perished *in utero,* and he reaches this end by means of his text-book and demonstrations made on preserved and fresh specimens. The subject of diagnosis should enter into the course as early as possible, and be made a marked feature throughout the entire two years of instruction.

At the end of the first semester he is, or should be, ready to begin the work of the second, which includes the normal mechanism, the management and physiologic phenomena of normal labor, together with the management of the lying-in period, and the care of the newborn. He also learns the prophylactic treatment of dangers arising external to the patient, which includes, as a chief feature, the technic of surgical asepsis and antisepsis in its every detail. At this time, drill on the manikin prepares the student to take charge of normal cases, always under the personal supervision of an able and painstaking clinical demonstrator. At the bedside he now learns to apply and verify what he has learned from his text-book, and his teacher in the classroom and the clinic.

The drill on the manikin with the normal fetus, or with the dummy, is of supreme importance to the student. He sees and understands for himself the wonder-inspiring process of accommodation of the fetal diameters to the pelvic dimensions. He begins to accept as demonstrable truth what before seemed only half truth, and he is willing to again and again repeat his assigned task, for he is beginning to love the work, and to desire its mastery.

After the student has thoroughly mastered the normal mechanism of first position vertex, he may begin to study departures from this first and normal standard: the second position in head with its anterior and posterior positions, to be followed by other varieties of head presentations in which delivery can be spontaneous. Breech presentations are then studied in detail. During these different exercises on the manikin he should be taught the judicious use of the hands in aiding spontaneous delivery; such as aiding flexion when extension prevents progress; watching and aiding rotation forward in the second posterior position; aiding the delivery of the shoulders, and the different manual methods of delivering the after-coming head. While manual interference properly belongs to abnormal obstetrics, it impresses the details of mechanism on the student mind, and teaches the use of his hands. The student must not be passed too rapidly over the exercises on the manikin, or he becomes confused, and fails to divine important steps one from another. Mastering each step as he advances, he becomes more and more interested in the work, and studies his subject for itself, and not for the forthcoming examination, which he should pass with credit at the end of the year.

The second or senior year should be devoted to pathologic obstetrics. In order to place the student on an independent footing, for which he has been prepared in the junior year, it seems best to drop the use of any particular text-book, and to assign his work by topics. Having his topic, he is free to consult any text-book or books available. He not only by this means gains a comprehensive idea of his subject, but he learns how to use his text-books. I have found it a profitable exercise to assign a particular topic for the whole class, both in the junior and senior courses, for investigation, requiring each student to write an essay on the subject assigned, giving the literature consulted. It is surprising the amount of research an enthusiastic, intelligent student will accomplish by adopting this method.

The surgery of the puerperium, the pathology of pregnancy and of the puerperium must receive due attention. While operative obstetrics is made a prominent feature of this year's work, especial attention should be given to the obstetric forceps. No student should be allowed to leave his school without a safe knowledge of this instrument, which he will gain only by the study of it as a mechanical appliance, and by thorough drill in its use on the manikin. The teacher should carefully guard the student against forming bad and careless habits in the execution of a forceps operation. How and when to make traction should be strongly emphasized and proper movements insisted on. Whenever an error is committed, the student should be required to correct it then and there, and be made to see his error, and to understand its correction. Beginning with the low operation he learns coolness, deliberation and the methods of making proper traction. From the low, he is advanced to the

medium, then to the high operation, learning in each case the meaning of "axis traction." It is unfortunate for the student's comprehension that the "axis traction" is so universally used to mean high operations or inlet operations. All traction made by forceps must be axis traction, whether their application be made at the pelvic brim, the pelvic cavity or at the pelvic outlet. Hasty, jerky and impulsive movements made by the student when using the forceps should bring from his teacher words of correction. A lack of knowledge of, and experience in, the important matter of applying the forceps, characterizes the work of the young, and sometimes the older practitioner as clumsy and dangerous.

Practical work in obstetrics should be required of each student before graduation, and to enable him to apply what he has learned from his text-book and his teacher he should be required to keep a systematic record of each case attended. In this way he can learn what can not be taught so well in the classroom; the characteristics of true and effective labor pains and of anomalous and inefficient pains; the indications for the application of forceps and the contraindications for their application. The record sheet should make a part of the year's course, and of the final examination, as an evidence of his fitness to practice obstetrics. The requirement of record keeping impresses the student with the importance of supervising each case that may come to him for care. It helps him to form systematic habits of thinking and of making observations that must contribute to a successful practice, and to the science of obstetrics. In the pathologic laboratory, room should be made for the study of disease and unhealthy conditions so frequently met with in pregnant and lying-in woman. In order to make his work useful and with a given purpose, clinical reports of cases, including pathologic studies made in the laboratory, may be required of the student.

Thus equipped at graduation, he is in a condition to make a post-graduate course in some good maternity, of value to him for further preparation for the practice of obstetrics.

EARLY OVARIOTOMY: ITS PRACTICAL NECESSITY.*

BY MARCUS ROSENWASSER, M.D.,
CLEVELAND, OHIO.

The time has long gone by when the growth of ovarian tumors was watched until they attained enormous proportions and were finally tapped to prolong the life of the doomed victim. Such tumors are almost extinct. We very rarely see them. The time has also passed, when ovariotomy was delayed until every other means, including repeated tappings, had exhausted the patient's strength and the operation was then performed as a last resort. The comparative safety of the operation, the inevitable growth of the tumor if left alone, and the possible later complications are facts so well known to physician and layman, that consent is readily obtained for early removal.

As is but too frequently the case with uterine carcinoma and with unruptured tubal pregnancy, the early stage of ovarian cystoma may likewise pass without subjective symptoms; the physician is not consulted until the patient herself notices some enlargement, or until it is discovered by accident. The rapidity of growth of such tumors can only be estimated. We are obliged to date them from the time of observation. At this time, unless malignant, they are considered harmless; the advice is accordingly given to put off their removal until they interfere with health and comfort. The family physician who gives such counsel hardly realizes what mischief his advice may ultimately cause. This lack of up-to-date information is not surprising when we recall the proportionately small number of cases that pass through the hands of any one individual. My motive in writing this paper is to bring more prominently before the profession the many accidents and complications that happen with small, as well as with recent growths of this kind. Note that neither the size, nor the age of a tumor is a criterion of the possible immediate or remote dangers from its presence.

A few typical cases have been selected to exemplify the various complications that may arise even in the early stage of ovarian cystoma, or that may result from delay. A number of these cases have heretofore been published in detail, and many others have from time to time been reported and the specimens exhibited to the local society. Only a brief synopsis will therefore be presented at this time to emphasize the special points to which attention is called.

It would prolong this paper beyond its scope to dwell on the subject of malignant cystoma, because if recognized early, we are all agreed that they should be removed at once.

Papillomatous tumors are classified as semi-malignant. Whether malignant or benign, removal before rupture, or before penetration of the cyst wall is likely to be curative. On the other hand, recurrence is the rule when the contents have escaped and have become disseminated. Both visceral and parietal peritoneum become secondarily infected and patients survive but a limited period. Absorption of the papillary excrescences and consequent complete recovery are the exceptions. A differential diagnosis between benign cysts and unruptured papillomatous cysts can not be made. The latter are liable to burst at any time and thus to contaminate the abdominal cavity. The only safe course lies in the removal of the tumor.

CASE 1[1].—Referred by Dr. A. F. Meyer. Mrs. S., aged 28, mother of three children, first noticed enlargement two weeks after birth of the last child, nine months ago, when she was larger than at term. She has been tapped three times since, is anemic and much emaciated. The diagnosis was ovarian cystoma, probably malignant. At the operation, Dec. 12, 1890, the broad ligament and peritoneum were fused by inflammatory adhesions. Papillary outcrop had penetrated the cyst wall and proliferated freely on the surface of the peritoneum; tumor removed; warty tufts not removable. Recovery followed with gain of twenty-five pounds in weight, but death from recurrence two years later.

CASE 2.—Referred by Dr. J. R. Smith. Mrs. S., aged 31, mother of two children, noticed a rapid increase in size of the abdomen the past four months, and was tapped three weeks ago. She is anemic and emaciated. The abdomen was filled with free fluid, in which a large nodular tumor was felt floating. The diagnosis was papillomatous cystoma. Operation, June 30, 1891, revealed a large quantity of ascitic fluid; multilocular tumor with extensive omental and sigmoid adhesions; peritoneum and pelvic floor studded with papillomatous growths. The tumors were removed; growths remained. Recovery followed, but death from recurrence ten months after operation.

CASE 3.—Referred by Dr. M. Albl. Mrs. C., aged 31.

* Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

[1] Cleveland Med. Gaz., September, 1890.

mother of one child 12 years old, has been sick with pain in the left inguinal region during the past three months. A tumor was found by the attendant three weeks ago. One week ago she was taken with severe pain in the lower abdomen; in bed since; temperature ranging from 100 to 101 degrees; "flowing" past two weeks; mass in left pelvis, size of orange; rectovaginal pouch bulged downward; cervix compressed against symphysis. A diagnosis of suspected ruptured tubal pregnancy was made and operation, Aug. 26, 1895, showed general intestinal adhesions; peritoneum deeply injected; large quantity of serum in the pelvis. In the midst of the adherent intestinal coils was an irregular, nodular, resilient tumor from the upper part of which cropped out papillary growths which spread over the surface of the intestines. Evidently the cyst had recently ruptured and caused the acute peritonitis. The cyst was removed; weight eight ounces. Recovery followed and the patient is still living, but with recurrence; abdomen enlarged, filled with nodular masses.

CASE 4.—Referred by Dr. A. F. Spurney, Mrs. T., aged 32, mother of three children, has had gradual growth of the abdomen the past year, with rapid increase the past three months. It is now the size of pregnancy at term. A diagnosis of ovarian cystoma was made. Operation was done Oct. 5, 1897, and the tumor found fixed above by dense, spiderweb adhesions, below was an immovable intraligamentous, papillomatous cyst; both appendages diseased; cyst dips deep down into base of the broad ligament, where there are papillomatous patches; impossible to form pedicle. Removal of both tumors and uterus by suprapubic hysterectomy was followed by recovery, but recurrence within six months, the patient still living.

CASE 5.—Referred by Dr. N. S. Everhard, Wadsworth, Ohio. Mrs. W., aged 52, passing through menopause, has had three children. She first noticed a movable bunch in the left side fifteen months ago, with rapid increase the past two or three months. Temperature ranges from 99.5 to 100 degrees; abdomen tender. The diagnosis was ovarian cystoma, and at operation, Oct. 23, 1897, the peritoneum and tumor walls were deeply injected; free, dirty fluid in the abdomen; numerous, recent intestinal adhesions; their separation causing copious oozing, the control of which required clamping of both ovarians. The contents of the tumor was the same as the fluid in the cavity; cyst papillomatous. One clamp was left on the broad ligament to ensure safety from hemorrhage. Recovery followed with recurrence within nine months. She is still living, but failing.

In the following two cases the cysts were intact when operation took place; there has been no recurrence to the present time.

CASE 6.—Referred by Dr. A. Steiner. Mrs. M., aged 57 years, was never pregnant. Her menopause was seventeen years ago. She first noticed enlargement six months ago; no pain, only discomfort. She was tapped three months ago for ascites, a second tapping three weeks ago, when a movable solid tumor, the size of a fetal head, was discovered in the right side above the pelvic brim. She was much emaciated. The diagnosis was malignant ovarian tumor. At the operation, Dec. 13, 1894, ascitic fluid was evacuated. The tumor consisted of papillary growth so soft in texture that it broke in a number of places, allowing the contents to ooze back into the pelvis. Below the pedicle in the broad ligament were five or six indurated nodules which were not removed. The patient has remained well the past four years, doing her own work.

CASE 7.—Mrs. H., aged 24, has had two abortions. She was curetted Oct. 20, 1896, for metrorrhagia; right ovary prolapsed, hard, not tender, size of walnut. Hemorrhage recurred in January, 1897, and after unsuccessful medical treatment she returned to be again curetted April 6, 1897; right ovary slightly increased in size. Early in July metrorrhagia recurred with rapid growth of the right ovary. By the middle of July the tumor reached midway between the pubes and umbilicus; distinct fluctuation. Diagnosis of ovarian cystoma was made, and operation, July 19, 1897, showed some free fluid in the abdomen; cyst the size of a child's head; contents bloody, flesh water-like fluid and papillomatous growth; thin two-inch pedicle. One year after the operation she had her first living child, now five months old.

These cases suffice to demonstrate the lesson I wish to draw. The tumors begin slowly, but after a time take on rapid growth and are liable to rupture, or the papillomata penetrate the cyst wall, and in either event the cyst contents infect the peritoneum. Not only does this lead to the formation of inflammatory adhesion, but it lays the foundation for an early recurrence. It is often impossible to differentiate between the character of cysts before operation. It is equally impossible to estimate the resisting power of the cyst wall. A cyst no larger than the fist is just as liable to burst as is one that fills the abdomen.

Even cysts that are not papillomatous may rupture before attaining a very large size, and lead to peritonitis unless the fluid contained within is sterile serum. In the latter event, whether the cyst ruptured or be tapped, patients may exceptionally recover and be cured without operation.

CASE 8.—I have no notes on this case. The facts in brief are these: I was asked by my friend, Dr. Cotton, to see Mrs. B., an elderly woman, who was known to have an abdominal tumor reaching a little above the umbilicus. At the time of the consultation she had been suffering from peritonitis for about a week. She was feverish, had marked abdominal tenderness; there was free fluid in the abdomen; the tumor itself could not be distinctly outlined. I advised awaiting the subsidence of the inflammation, and subsequent removal of the cyst. I did not see the patient again, but was informed by the Doctor that with the abatement of the acute symptoms the enlargement diminished until the tumor entirely disappeared.

CASE 9.—Mrs. V., aged 20, mother of one child, five months old, after confinement noticed she was much larger than other women under similar circumstances. She continued to grow until she was nearly as large as at term. The tumor was movable and gave distinct fluctuation. On Aug. 17, 1875, I tapped the tumor midway between the pubes and umbilicus, and removed about one gallon of thin, reddish fluid. The abdomen never refilled. The patient had a number of children afterward, and remained in good health. I would not dare treat a like tumor in like manner today.

CASE 10.—Referred by Dr. J. Goldfinger. Miss K., aged 20, after suffering "cramps" in the lower abdomen for two days, called at the doctor's office for relief, but refused examination. She was ordered to go to bed, but knew better, and was up and down for two weeks, when she finally allowed herself to be persuaded to enter the hospital. During the prevalence of peritonitis, together with a tender mass in the right iliac fossa, she was treated for appendicitis. After subsidence of the acute

symptoms, the diagnosis of ruptured ovarian cyst was made. The cyst reached to the umbilicus. Operation, Sept. 29, 1898, revealed right ovarian cyst; more or less recent adhesions in the right iliac fossa, fused with an ugly exudate on the cyst wall resembling a phagedenic ulcer of the size of a silver dollar. This proved to be the remnant of a small secondary cyst which had ruptured and was the original cause of the peritonitis; cyst contents, three pints of clear, viscid fluid. Recovery followed. Had the patient been aware of the existence of a growth, its removal before rupture would have been a very simple thing.

Even without rupture or trauma, cysts may become adherent or infected by intercurrent disease, especially of the tubes or of the appendix.

CASE 11.—Referred by Dr. E. M. Davidson. Mrs. A., aged 25, was never pregnant; six months ago Dr. D. found a tumor in the pelvis. The tumor caused no trouble until recently. The diagnosis was parovarian cyst. Operation, March 16, 1893, revealed right unilocular cyst with clear fluid contents; a knuckle of intestine so firmly adherent that the gut was opened while liberating the adhesion; immediate closure of intestinal laceration; left pus-tube burst during enucleation; intestinal adhesions to tube. Despite difficulties and complications, the patient made good recovery.

CASE 12.—Referred by Dr. T. A. Weed. Mrs. W., aged 20, mother of one child, had symptoms resembling tubal pregnancy. Under anesthesia, before curetting, a mass the size of an orange was found in the right pelvis; no improvement after curetting. Laparotomy one week later, July 13, 1894, proved the mass to be a small ovarian cyst attached to the right pus tube; omental adhesions; left tube also contains pus. Recovery followed.

Cysts that have formed adhesions to contiguous viscera not only offer greater difficulties in their removal, but are more readily infected—on account of the diminished resistance of the partition wall to the passage of disease germs. This may lead to infection of the cyst contents, and suppuration. The removal of suppurating cysts is likely to be a difficult procedure, very often followed by serious complications, or resulting in death.

CASE 13.—Referred by Dr. F. S. Pomeroy of Chardon, Ohio. Miss E., aged 23, had been sick about four months, in bed six weeks, having chills and fever, with temperature varying from 100 to 103 degrees. Three weeks ago Dr. P. outlined a fluctuating tumor on the left, reaching to the umbilicus and dipping down into the pelvis. When seen, Aug. 31, 1894, she was a very sick woman: Pulse rapid and weak; temperature 102 degrees; no distinct tumor wall, but fluctuation could be felt over the entire abdomen. Diagnosis of sepsis from suppurating cyst, or ruptured cyst, was made. Operation September 1, revealed the cyst wall acutely inflamed; contents offensive and grumous; intestinal adhesions; patient in shock. She died fifteen hours after operation, from post-operative hemorrhage.

CASE 14.—Miss J., aged 20, five years ago had abdominal enlargement, with much pain. The enlargement gradually disappeared. After this she always had pain in the left hypogastrium, on exertion, or sudden jar. July 11, 1895, she was taken with severe pain in the left side, with pulse 116, and temperature 103 degrees. Rectal examination showed a globular, resilient tumor filling the left pelvis. Peritonitis lasted two weeks; August 3, sudden pain and collapse; reaction with chills, fever and sweats. A diagnosis of probable suppurating cyst was made. Explorative operation, August 17, revealed universal adhesion of the omentum and intestines. Careful separation opened into the pus cavity. Continuation of exploration was not warranted; drain. Discharge of pus continued for three weeks, temperature ranging from 99 to 103 degrees; streptococci in pus. Operation was made for removal of tumor, September 6, the incision from the fistula; small intestine injured during separation of interminable adhesions. On enucleation the tumor proved to be an ovarian cyst the size of a small cocoanut, leaking pus. She recovered from the second operation, but succumbed in a later attempt to close the fistula resulting from lacerated intestine.

In several of the above cases the tumors were undoubtedly present during pregnancy, though not discovered until after delivery. The danger of this complication is so well appreciated that removal of the tumor during pregnancy at any period is the established rule. Tapping may temporarily accomplish the same result, though it is very unsafe practice.

CASE 15.[2]—Referred by Dr. A. Peskind. Mrs. K., aged 21, had one child. When she was four months pregnant, Dr. P. found a tumor occupying the right side of the pelvis. Later she had spells of localized peritonitis. At eight months her attendant tapped to relieve distension, evacuating a gallon of turbid fluid. Two days later premature labor occurred, the child living but a few hours. The tumor refilled. Diagnosis of intraligamentary cyst was made and operation Jan. 5, 1890, six weeks after labor, showed monocyst of right broad ligament, containing puriform fluid. Recovery followed.

CASE 16.—Mrs. C., aged 28, pregnant two months, had felt a small hard movable body above the pubes seven months before, and has felt it occasionally since. Six days ago she was taken suddenly with violent vomiting, which still continues. A hard, irregular, nodular, movable tumor present in the anterior portion of the left pelvis; enlarged uterus to the right. Diagnosis: torsion of pedicle of solid ovarian tumor, with probable pregnancy. Operation, Jan. 12, 1898; fibroid tumor, size of large apple twisted two and one-half times about its thin, flat pedicle, growing from broad ligament just above the enlarged cystic ovary. The tumor removed, recovery followed and pregnancy continued to term, the mother and child doing well.

Torsion of the pedicle may convert an innocent growth into one of very serious import, even though pregnancy does not exist.

CASE 17.[3]—Referred by Dr. N. Weidenthal. Mrs. S., aged 39, mother of four children, was known to have a smooth, pearshaped, freely movable tumor in the hypogastrium, reaching to the umbilicus. Three months ago she was seized with a sharp, lancing as well as labor-like pain from the left lumbar region to the groin. This pain has never ceased; it has returned at intervals of three to eight days. On September 26 she was seen in consultation and had been in bed for two days; pains more constant and severe; tumor outlined and movable. On September 28 she went into collapse; intense pain, vomiting, abdomen distended, tender; tumor indistinct; bowels obstructed. Diagnosis: Peritonitis due to ruptured cyst, or a twisted pedicle. At operation, Sept. 29, 1892, an intensely congested, black tumor presented. It was twisted three times about its short, thin pedicle; hematoma of tube and cyst wall. Circulation had been completely cut off; peritoneum deeply injected, but as yet no serum or lymph formed; tumor removed. Recovery followed.

[2] Ibid. [3] Ibid. November, 1892.

Dermoid cysts are especially prone to infection, owing to the heterogeneous character of their contents. The adhesions formed between these cysts and the hollow viscera, as the bladder or intestines, may not only cause suppuration of the cyst, but a perforation of the adhesion may lead to chronic septicemia. An interchange of contents takes place; feces, urine and products of decomposition enter the cyst, and bones, teeth, hair and other tissues belonging to the dermoid, pass into the viscera by process of ulceration, frequently leading to exhaustion and death. The dermoids I have met have fortunately been removed before infection, hence have caused no trouble.

It seems to me unwise to further multiply instances lest my time and your patience be exhausted. Sufficient facts have been cited from my own limited experience to call attention to the frequent accidents, misfortunes and complications occurring during the development of ovarian growths. The experience of others, much larger and more varied, only serves to corroborate the conclusions to be drawn.

1. Uncomplicated ovariotomy, in proper hands, is a simple operation with scarcely any risk.

2. Malignancy, trauma, torsion of pedicle, infection, suppuration, adhesions to viscera, and pregnancy materially increase the difficulties and risks of the operation.

3. To avoid complications liable to occur at any time, the removal of ovarian growth should follow the diagnosis without unnecessary delay.

Let the terse axiom, formulated by Dr. Howard Kelly, henceforth be the recognized rule of procedure: *"From a practical standpoint all ovarian tumors must be considered as malignant until removed and proved otherwise."*

THE NEUROTIC'S DIET.*

BY HENRY C. EYMAN, M.D.
CLEVELAND, OHIO.

Before entering the special domain of the neurotic and discussing his proper diet, it will be necessary to devote a few minutes to the general subject of diet and the value of foods. The value of foods may be considered as three-fold: 1, the production of energy; 2, the repair of tissue; 3, the increase of adipose tissue to serve as a protection and covering in the body.

There are at least thirteen chemical elements which enter into the composition of the body, but only four which are found so abundantly as to indicate that they are indispensable to life, viz., carbon, oxygen, nitrogen and hydrogen. Now, foods which contain these elements are necessary for the three-fold use above mentioned. We are taught that nutrition of the body involves several distinct processes:

1, the secretion of digestive fluids and their action upon food in the alimentary canal; 2, the absorption of the ingredients of the food, when digested, into the blood and lymphatic vessels; 3, the assimilation of the absorbed nutritious products by the tissues; 4, the elimination of waste material.

There may be an abundance of nutritious food, and yet with any of these processes in deranged working order, malnutrition will at best be all that can be accomplished.

Baron von Leibig was the first to suggest a scientific division of foods. He grouped all foods into two classes —nitrogenous and non-nitrogenous. The former he claimed to be "tissue-builders" and the latter "force-producers." Under the former he classed fish, flesh, fowl, milk and eggs; under the latter, vegetables, fruits, cereals, starches, sugars, gums, fats and oils. This division had many vulnerable points, but it served its purpose and is still used in speaking of foods in a general way.

Some vegetables contain nitrogen, and animal food is not strictly nitrogenous, as it contains fat and glycogen, therefore it is not practical to confine ourselves to either an absolutely nitrogenous diet or to a non-nitrogenous one, but for general purposes this classification answers very well. There are other divisions and classifications, notably that of Prout, who groups foods as aqueous, saccharine, oleaginous and albuminous. But much can be found to criticise in this division, because it fails to provide for salines, starches and gelatinous substances. Thompson, in his work on practical dietetics, classifies foods as follows: 1, water; 2, salts; 3, proteids—chiefly albumin and allied gelatin; 4, starches; 5, sugars; 6, fats and oils. And, indeed, to be exact one should not stop here, because we have oxygen, hydrogen and other elements which can be used as foods entirely independent of either of the groups above mentioned.

It will sufficiently answer the purpose of this paper to accept the most simple classification, as we desire to discuss foods from the standpoint of value. First, then, are the energy-producers. Here is a call for foods which will store up energy in a latent form and subsequently allow liberation in the form of heat and motion. "Force is the manifestation of energy," therefore that which stores up energy must be subsequently manifested as force. The foods which produce this in the greatest degree are sugar and starch. There are numerous tables given, showing the comparative values of the different articles of food, and the relative amount of the nitrogenous and non-nitrogenous matters. These can be found in almost any text-book. Sugars may be defined as crystallizable carbohydrates in which oxygen and hydrogen exist in proportions to form water. There are many varieties of which those commonly contained in food or used as an adjunct to diet are cane sugar, saccharose, grape sugar or glucose and sugar of milk or lactose. Then we have beet sugar, maple sugar and sugar from other vegetable growths. In addition to these all starches must be converted into sugar before they can be assimilated.

By some it is claimed that sugars are merely force-producers, and by others that they are fattening as well. It is probable that their action in the production of adipose is merely because they spare the consumption of albumin and fat, as stated by Bauer, which are then converted into tissue fat. It is, therefore, pretty well established that the production of energy depends entirely upon the sugars and the starches, yet if the repair of the tissues be not looked after, this energy would soon consume the body. It is not our purpose to go into a study of the various kinds of energy-producers, nor whence they are obtained, as that would be manifestly impossible in a short paper. The second of these three-fold values—the repair of the tissues—will be found in the nitrogenous foods, chief among which are the various kinds of meats, milk and eggs. Meats have been used as foods for neuropathic individuals for many hundreds of years, and are still regarded as the *sine qua non* in certain forms of nervous diseases, and in persons suffering from neurasthenia. It is obvious, if a patient is exhausted and his tissues improperly functionating from

*Presented to the Section on Physiology and Dietetics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

a lack of proper nourishment, that the tissue-repairers are indicated. In these cases a meat diet often works wonders. And I wish to emphasize the fact that this exhaustion and subnormal vitality is not always accompanied by any great reduction in adipose tissue. In fact, the patients often look to be in good bodily health, but as a matter of fact the muscles are atonic and the whole system is incapable of prolonged resistance. On the other hand there are cases of mental alienation in which the meat diet aggravates the psychosis.

Clouston claims that a large proportion of cases of adolescent insanity are found to have been flesh-eaters. They have a craving for such foods, and have eaten but little else. He says it is such boys who form the habit of masturbation, which when acquired, produces such a fascination and a craving that it may ruin the bodily and mental powers. Such patients should be given a diet of milk, fish and farinaceous foods. The greatest reliance is to be placed in milk. Alcohol should be prohibited in such cases. All patients who can assimilate it should have cod-liver oil. Hypophosphites and pepsin are excellent remedies, and in connection with the oil, serve as foods. Many patients take on fat rapidly under this treatment, and oftentimes lose in weight promptly should the diet be discontinued. A patient suffering from adolescent insanity should gain in weight if steady improvement is desired. Dr. Rutter, superintendent of the Hospital for Epileptics at Gallipolis, says that he can throw half his patients into fits in twenty-four hours by improperly administering a meat diet.

In speaking of the diet for young persons suffering from mania, Dr. Clouston says: "It should consist largely of milk and farinaceous diet for the young." "I lately saw a very excitable boy of 6 years, very thin, restless, not sleeping much, and of course very bright and quick for his age. I found he was getting animal food three times a day, and his guardians deplored the fact that he could not take milk. My advice was to starve him into taking it, to make him walk much, and keep him out, and give him when he came in, only bread and milk. Of course, it was disagreeable at first, but the boy soon acquired an appetite for such food, his bodily conformation largely changed, and he got fatter, less active, less nervous and slept far more." Children with this disposition are nearly always flesh-eaters, and I have sometimes found them fed on beefsteaks and port wine with strong beef-tea between meals.

There are some forms of neuroses in which an almost exclusive meat diet is absolutely essential. When the skin is dry and parched, and the nerves are desiccated, burned out, producing an irritability and motor restlessness not found in any other condition, then we should regard the meat diet and hot water as peculiarly indicated. I say hot water because cold water would surely derange the digestion and the system is so evidently in need of fluids. Therefore it is as necessary for the physician to diet his patients as individuals and not classes as it is to individualize in the administration of any drug.

Probably the most important manifestation of mental trouble is melancholia, because, as has been aptly said, "melancholia is the sanest kind of insanity," and because it is the most frequent manifestation and the one with which the general practitioner most often comes in contact; therefore we will consider the proper diet for melancholic patients. All those who have had the opportunity of observing the melancholic are cognizant of the fact that the patient is suffering from dyspepsia. He refuses food; the breath is foul, the tongue is coated, and the bowels are constipated. It is probable, however, that all these symptoms of dyspepsia are the result and not the cause of the depressed nervous condition. Because of the disease of the nerve-centers, the tongue is coated with old dead epithelium, which for the same reason, is not thrown off; this causes the fetid breath and the dislike for food, and consequent starved condition of mind and body; and because of the general lowered tone the bowels become constipated. We should not attempt to relieve these conditions by treating symptoms only, but should direct our energies toward the relief of the general neurosis. We might be able to relieve the dyspepsia temporarily by the administration of drugs, but the relief would not be lasting; the condition which contributed to the primary dyspepsia would undoubtedly be a potent factor in its recurrence, therefore we must reach the seat of the disorder. A proper diet is our most powerful agent, and for these cases the following should be prescribed: Before getting out of bed a cup of hot water with a dash of brandy; breakfast, meat and eggs; lunch at eleven and two, consisting of beef-tea or cocoa, crackers, milk and fowl; dinner at six, consisting of broiled fish, roast beef, green peas, asparagus and toast; at bed hour a light repast with a small quantity of malt liquor. I have known many patients to improve rapidly upon this, or a similar diet, and their dyspeptic symptoms disappeared with the improvement in the general tone. Your melancholy patient is always illy nourished, and nothing so retards improvement as lack of proper diet. How dependent these melancholic patients are upon food has often been proved. Some who have convalesced steadily and who are apparently almost recovered if they for some reason miss a meal, or even have it considerably postponed, have felt at once a return of the depression and delusions, which vanished again after the reception of foods.

Those connected with our large hospitals for the insane will bear witness that nearly all suicides occur about twilight in the morning.

As nearly all melancholics suffer from brain anemia the natural conclusion would be that the brain would be clearer at this hour than any other, and consequently there would be less inclination to suicide, therefore there must be some other reason for this almost universal exacerbation of depression. Because of the general malnutrition we have thought this great depression might be due to lack of food, and if a light lunch be served after midnight to these sleepless melancholics the period of exacerbation might be bridged. Acting upon this thought it has been our custom to administer milk or eggnog to the restless after midnight, and so far with gratifying results. The patient becomes quiet, restful and nearly always falls into a refreshing slumber, awakening in the morning in a more nearly normal state of mind. We have not given the thought sufficient experimentation however, to advocate it unreservedly, though we do believe there is a field of useful research in this direction. When a patient habitually wakens after three or four hours and can not go to sleep again, we always try a glass of milk and a few crackers, and nearly always secure for the patient from two to four hours of undisturbed rest. Clouston says: "If I were as sure of everything else in therapeutics as this, that fresh air and fattening diet are good for melancholic people, I should have saved myself many medical questionings."

Melancholic patients can not have too much fresh air, though they may have too much exercise. Pure oxygen

is as necessary to them as pure food, though the mistake should not be made of exhausting your patient by too much walking or other exercise. Should the weather be fine, the patient should be in the open air nearly all the time. Nothing else is so conducive to sleep as fresh air, or equals it as a hunger producer. Every possible care of the patient may count for naught if pure air can not be supplied. It is not considered possible to fatten a patient too soon or too rapidly, though great care will have to be taken not to overload the stomach and thus produce gastric and intestinal troubles.

Fatty foods, milk, ham and cod-liver oil, maltine, eggs, farinaceous foods, easily digested animal food, such as beefsteak, fish and fowl, can all be used to advantage in feeding melancholics. I suppose milk is more universally recommended than any other one article of diet, and by some authors regarded as a sheet anchor. Clouston speaks of having given as high as sixteen tumblers a day with surprising benefit. We should, however, constantly keep in view the fact that neurotic people are usually lean people, and that fat and nervousness are antagonists, particularly when the nervousness is manifested by melancholia. Therefore, whenever one has succeeded in increasing the adipose in a patient an amelioration of the melancholic symptoms can almost always be expected. "Laugh and grow fat" is an old saw, but from a medical standpoint it might be better said by "grow fat and laugh." Mrs. Carlyle, after an attack of "nervousness," wrote: "Oh! thank God for the precious layer of impassivity which that stone weight of flesh has put on my nerves."

As I have previously said, there are times when stimulants are useful. Ale and porter work wonders on lean, anorexic melancholics, by their fattening and appetizing qualities. A favorite prescription is a half glass of Burgundy and the whites of two eggs every three hours. The stronger stimulants are seldom used, except in cases of extreme exhaustion. The writer has had excellent results, however, with whisky and hot water, in cases of insomnia, though some authors claim to have equally as good results from the hot water alone taken at bedtime. As soon as the patient has notably gained in body weight all stimulants should be discontinued.

To take up seriatim the different forms of insanity is manifestly impossible in our time limit. We must therefore content ourselves with a few general statements. Some medical men of acknowledged ability advocate a purely vegetarian diet, and others of equal ability advocate a meat diet, to the exclusion of all vegetables and fruits. It is probable that there is a golden mean to be found along the lines indicated in this paper. Take the two extreme schools and add them together and you get a plentiful dietary; subtract the one from the other, they reduce themselves to a simple and unsatisfied emptiness. Exclusive systems of diet result from the application of observation on disease to the regulation of the body in health. It is only necessary to change the disease to get an entirely new set of requirements. There is no doubt of the efficacy of raw meat, dry bread and hot water, exclusively in the very common acid dyspeptic states, while plethoric individuals with irritated kidneys and the neuralgic twinges of the uric acid condition, will just as surely obtain relief by the use of farinaceous food and nuts.

In addition to the above-mentioned schools, we have the Ralston club, whose advocates claim to have solved the mystery of arteriosclerosis. Their logic is simple. The arteries calcify; the lime salts cause calcification. All food except fruits, and all natural waters, contain lime salts, *ergo,* eat nothing but fruit, drink nothing but distilled water and avoid this most common disorder of the aged. Students in natural history tell us that monkeys eat nothing but fruit and live to a great age. Their intellect, however, is not remarkable. On the other hand the raven eats nothing but carrion and lives to a greater age than the monkey, therefore we are forced to the conclusion that the study of our remote ancestors or their contemporaries will not aid us materially in solving this vital question which resolves itself into one of temperance and moderation. Burton says: "Food improperly taken not only produces original disease, but affords those that are already engendered both matter and sustenance; so that, let the father of disease be what it may, intemperance is certainly its mother." And now in conclusion let me say to you in the words of Quarles: "If thou wouldst preserve a sound body use fasting and walking; if a healthful soul, fasting and praying, walking exercises the body, praying exercises the soul, fasting cleanses both."

INHIBITORY ACTION OF THE CEREBRUM.*

BY J. F. PEAVY, M.D.

ASHEVILLE, N. C.

Irritability and contractility are primary properties of protoplasm. In their earliest forms they express the simple play of elementary chemical and physical forces. In undifferentiated protoplasm, they exist as general diffused properties of reacting to incident forces indifferently in all directions. The progressive differentiation of form and function expressive of organic progress implies the development of specific irritability or susceptibility to specific excitants, along with the capacity to react in definite ways to these excitants. It implies further the development of a nervous mechanism by which this special irritability is manifested, and through which the reactionary impulses are transmitted to be developed into organic activities. The special senses are special developments of this irritability, and the varied motor activities of animals are derivatives of this primary contractility manifested by protoplasm.

All organic reactions involve a reflex element or factor in that they are in a sense responses to stimuli received through sensation. A strong tendency is manifested by the modern physiologic psychology to treat all nervous action as reflex, even to our highest acts of cerebration. This view I cannot accept unless we regard the reactions when they occur as due to a summation of sensory stimulations. In an act properly reflex the sensory incitement should be the equivalent of the reactionary discharge. As manifestations of energy there is, in fact, no correlation between the two processes, even in acts that are usually considered typically reflex. What the sensory stimulation really does is to discharge an accumulated tension. The properties or qualities of an organism may be defined as its store of accumulated potentials, built up by the operation of experience upon inherited capacities, and existing with reference to ends in the environment. Sensation discloses relations between organism and environment. When reactions follow sensory excitement the real impulse arises within the nerve-centers of the organism, the sensation serving to unlock a stored potential. Reactions occurring without conscious cerebration intervening between sensation and act may properly be described as automatic rather than reflex. Even here, as well as in the

*Presented to the Section on Physiology and Dietetics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

case of voluntary action, measured in dynamic terms, the motor efflux may vastly exceed the sensory influx, the merest suggestion serving sometimes to put the nerve-centers in energetic action.

Sensory stimulations may not, however, be immediately discharged in motor impulses, but may be themselves stored as part of the accumulated tensions. Herein lies a power the antagonist of reflex action. It is this capacity to stay action, to dominate reflex impulses, inseparably associated with organic progress and especially with the higher phases of human action and development, that I wish to emphasize in this paper.

In every action there is a primary impulsion taking its rise in some way from the needs, desires, inclinations or aspirations of the organism. This primary initiative contributes in part only to the shaping of our voluntary acts. In the sphere of automatic activity, it is entirely the determining factor. Inhibition has doubtless played an important part in shaping even our automatic activities, directing action and development along definite lines. Doubtless there are automatic inhibitions operating subconsciously as part of our self-acting physiologic mechanism. The action of arrest exerted by the pneumogastric on the heart is a familiar illustration of automatic inhibition. The action of the vasodilator nerves and the physiologic dilation of the sphincters are other examples of this mode of action. Doubtless the normal rhythm of glandular actions is dependent largely upon inhibitory nerve influences. Abolition of secretory action, arrest of peristalsis, and cardiac and vasomotor disturbances frequently illustrate pathologic inhibition.

Inhibition as a cerebral function, as a factor in voluntary conduct, is of more especial interest to us in this paper. Even the organic inhibitions which we have instanced, at least those which are physiologic, if not cerebral functions, are closely related to cerebral states. The vasomotor disturbances, flushing and paling of the face, as well as the disturbances of cardiac rate and rhythm produced by strong mental excitement or emotion are due to disturbances of the normal influence of the cerebrum over cardiac and vasomotor control. The normal dilatation of the sphincters of the bladder and rectum which precede the evacuation of those organs are inhibitory acts which lie just within the limits of voluntary control, and involve, of course, the participation of the cerebrum. Like all actions which lie near the boundaries between voluntary and automatic action, they are easily lost control of, and sometimes take place automatically under strong cerebral excitement. In infancy, where all action is, in the main, reflex or automatic, and voluntary control only incipient, these functions are performed without the intervention of conscious volition. Instances are on record of persons able to exert a voluntary inhibition of the heart's action, slowing it at will, and even causing it to stop beating for a time. Such are instances of function ordinarily automatic placed in these cases within the reach of voluntary influence. This action would imply an organic deviation involving a closer connection of the consciously acting cerebral centers with the origin of the cardiac fibers of the pneumogastric.

The cerebrospinal axis, with its connections, sensory and motor, with all parts of the body, constitutes the nervous mechanism for directing the motor activities of animal life. Its progressive development has been a condition of the progressive specialization of actions in the higher orders of animal life. The later stages of this development in the higher animals and in man has been chiefly cerebral, going on *pari passu* with the development of intelligent direction and control of actions. This cerebral development has marked man's progress as an intelligent and moral being.

The spinal nerve-centers preside over actions which are reflexly excited and automatically performed, and which relate in general to the avoidance of pain or injury, the protection and preservation of the body. These centers, however, are not entirely independent, but subject to more or less control from the consciously acting cerebral centers. This control is effected by the exercise of inhibitory or depressomotor influence over them.

The highly evolved and complex conditions under which the civilized man lives, make it necessary at times to postpone the present to the future, to endure present discomfort or suffering for the sake of future good. Reflex action prompts to avoid the present pain or grasp the present pleasure, regardless of future consequences. Advanced mental organization, which means high cerebral development, is the antagonist of reflex or impulsive action.

The advance of the race in intellectual and social development and organization has produced new relations, and imposed new obligations. The cerebrum is the special organ for apprehending these new relations and obligations which grow out of the social state. The reasoned purposes upon which the enlightened and moral man acts mean a higher and broader adjustment to the conditions of life. Man reaches and maintains himself upon this rational and moral plane by inhibiting the lower impulses of his nature. These lower instincts, by continued control, lose something of their fierce power, the energy being diverted into higher channels, and developing into higher forms of activity. Inhibition is as much a factor in mental as in moral activity. The power of attention, of application, of mental concentration, is secondary to a power to inhibit impulses to distracting excitations.

The cerebrum is a sort of storehouse for excitomotor impressions. These impressions, instead of being reflected directly in acts, tend to build up mental attitudes or tensions. They may serve to discharge accumulated tensions. Any mental position is incipiently motor. It is this capacity of the cerebrum to store impressions, to stay action, to accumulate energy of position, which distinguishes it radically from the lower centers in its mode of action. This is thinking, as opposed to reflex action. Conscious thinking takes place in the interval between sensation and adjusted action.

The field of conscious action has expanded proportionately with the growing complexity of the conditions of civilized life and the difficulty of automatic adjustment. With each step in development the cerebrum has more and more assumed control of the activities of the organism. The lower centers, however, have not been abolished, but retained in subordinate places in the hierarchy of nervous organization.

The demonstration, by Cajal, of direct fibers connecting the nerve-roots in the posterior sensory horns of the spinal cord with the anterior motor cells, shows that the mechanism of reflex action in the spinal cord has been retained, as the possession of the function itself would necessarily imply. The existence, however, of nerve-routes from these sensory roots to the consciously acting cerebral centers is doubtless an important part of the mechanism for regulating spinal reflex action. Many so-called inhibitions are, perhaps, passive, and consist simply of the sensory stimulation flowing on through an open channel into a higher center without awakening the reflex center at all.

FRACTURES OF THE FEMORAL NECK.

THEIR ANATOMIC TREATMENT.

BY C. E. RUTH, M.D.

Professor of Descriptive and Surgical Anatomy in the Keokuk Medical College; and Clinical Surgery at St. Joseph's Hospital.

KEOKUK, IOWA.

Can the notoriously bad results following fractures of the femoral neck be improved? We feel like answering unhesitatingly that they certainly can, and therefore should be. Explanations are numerous and plausible for the frequent occurrence of this accident in the old, especially women. The causes given for non-union are much less satisfactory. We may instance the following defects supposed to exist: Nature's provisions for repair by limited vascularity, inefficient immobilization, insufficient extension force.

It is not my purpose to review extensively the literature of this subject, but to indicate more especially some of the reasons I consider most important factors in obtaining the unsatisfactory results thus far. In 1890 my attention was first called to what I have come to consider the correct anatomical treatment of these lesions, by Prof. T. J. Maxwell. The method was, I believe, original with him. He has used it for twenty-five years.

The first indication in the treatment of all fractures is correct adjustment of position; the second, immobilization, the third, overcoming muscular action which would tend to disturb the relations by extension, splints, etc. It is very easy and natural to blame nature with defects in our own work, but we should first look carefully to our own responsibilities and see that our own errors are eliminated.

In these cases there is no muscular effort or influence operating on the upper fragment, and the results as to the position of the lower portion will depend on the position of the patient, the kind of retaining force, and his own muscularity, for muscular action is of more importance in determining results of fracture here than anywhere else in the body.

This is due to the great number of powerful muscles passing over the fracture line to be inserted somewhere beyond, and which must exert a powerful displacing force.

The position at least for a time that must be taken by these cases is upon the back, and the displacement is known to be upward, backward and outward rotation, with all the internal displacement of the lower fragment which the muscular tissue will permit.

The pronounced tendency to eversion and external rotation is increased greatly by the external rotary power of the psoas and iliacus, which was neutral or else an internal rotator now must be a pronounced external rotator, because the insertion into the back and internal portion of the upper end of the femoral shaft and lesser trochanter throws the line of action internal to the point of resistance, whereas it was formerly external.

The result is that we have the following muscles acting to produce the following results:

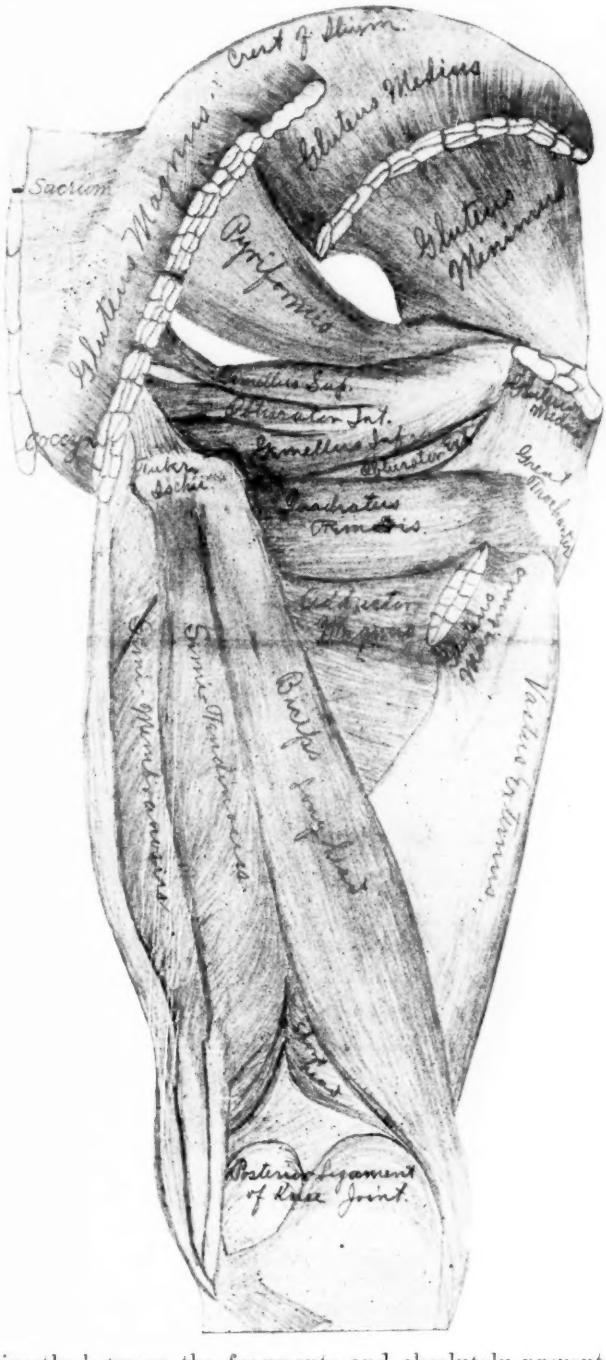
Those pulling nearly directly upward and tending to shorten the limb by over-riding of the fragments: Rectus, sartorius, gracilis, semi-tendinosus, semi-membranosus, long head of the biceps, vertical portion of the adductor magnus.

Those pulling very strongly inward as well as upward: Adductor magnus, except vertical portion; adductor longus, adductor brevis, pectineous, gluteus maximus, gluteus medius, and gluteus minimus.

Those which pull almost directly inward and rotate outward: Pyriformis, obturator internus, gemellus superior and inferior, obturator externus, quadratus femoris, lower half of gluteus maximus.

Those which pull inward, upward, and rotate inward: Tensor vaginæ femoris, and the anterior portions of the gluteus medius and minimus.

Those formerly internal rotators exerting a strong upward pull are now external rotators, often drawn



directly between the fragments and absolutely preventing approximation of the bony parts: psoas and iliacus.

It will thus be seen that the external rotary force greatly predominates over the internal because of the conversion of internal rotary force of the psoas and the iliacus to external, besides the power of the limb's weight to accomplish the same ends. Lastly, we have the important displacing force, weight, tending to carry the upper end of the lower fragment behind the line

it should occupy because its old attachment support is gone. Posterior displacement and external rotation are only limited by the Y ligament.

Adjustment of the fragments is best accomplished by flexing the thigh upon the abdomen to relax the psoas and the iliacus, bringing them above the fracture line, thereby preventing them from being permanently caught between the fragments.

This position also relaxes nearly all the external rotators; then make vertical traction on the shaft of the femur, which now stands at right angles to the trunk, while moderate eversion is being maintained; next abduct to normal line and make extension in the long axis of the trunk while an assistant makes traction one-half to two-thirds as strong outward, slightly upward and forward from the upper end of the femoral shaft. These manipulations should be made by firm, steady traction, not by jerks, which is to be made continuous by Buck's

1 Psoas and ilacus above line of fracture, when thigh is flexed at right angles to the trunk before making extension.

extension with a weight of from ten to twenty pounds, according to the muscularity of the patient, with elevation of the foot of the bed enough to counteract the tendency of the patient to slide down to the foot. This means an elevation of from six to fifteen inches. A binder's board, or other splint material, should now be moulded to the upper inner aspect of the thigh, over which a band of muslin four to six inches wide should pass outward, slightly upward and sufficiently forward that the weight over the pulley shall overcome the internal pull of all of the rotators and adductors and at the same time raise the lower fragment to its normal level.

The weight on this lateral pulley will be from five to fifteen pounds, according to requirements. The side of the bed corresponding to the injured side of the patient must be raised enough to prevent the individual from being drawn out of position toward the lateral pulley. Patients so treated will have absolutely no pain whatever after spasmodic muscular action is entirely overcome. As to results I herewith report a few cases treated as above.

CASE 1.—Mrs. G., aged 52 years, had intracapsular fracture of the femur Jan. 14, 1871. She lived twenty-five years thereafter, being able to perform the duties devolving upon the average farmer's wife without any disability in any manner traceable to the injury. No shortening. Physician, T. J. Maxwell.

CASE 2.—Mr. R. P., aged 72 years, sustained an intracapsular fracture of the femur Jan. 29, 1881. Result, union without shortening. Physician, T. J. Maxwell.

CASE 3.—Mrs. Courtney, aged 64 years, sustained fracture of the femoral neck in January, 1883. There was union with no shortening, discoverable on examination and careful measurements four years later, by Drs. Kinnaman and Maxwell. Physician, T. J. Maxwell.

CASE 4.—Mr. P. F., aged 25 years, in 1883 fell thirty feet sustaining an intracapsular fracture of the femur. The result was a union with one-half inch shortening. Physician, George F. Jenkins.

CASE 5.—Mr. ——, aged 50 years, who was a bridge carpenter, and heavy and large, fell twenty feet, sustaining fracture of the neck of the femur, one through the upper third of the femoral shaft. Result was a union with one-half to three-fourths inch shortening. Physician, T. J. Maxwell.

Showing through the artificial muscles the tendency of the psoas and iliacus to fall between the fragments.

CASE 6.—Mr. C., aged 86 years, fractured femoral neck by fall on the ice. Result was a union in four weeks, but death resulted in seven weeks from exhaustion resulting from his enfeebled condition, bedsores, etc. Physician, T. J. Maxwell.

CASE 7.—Mrs. T., aged 71 years, fractured the neck of the femur in June, 1891. Result, union with three-fourths inch shortening. She uses the limb without apparent inconvenience. She was very poor, had indifferent care, and the weights were not always on. Physician, C. E. Ruth.

CASE 8.—Mrs. W., aged 70 years, in July, 1891, fractured the femoral neck. Result, union with one inch shortening, and use of the limb seems but slightly impaired. Physician, C. E. Ruth.

CASE 9.—Mrs. P., aged 86 years, sustained fracture of the femoral neck in August, 1891. This patient was so completely demented that she would not tolerate any restraint; would not allow dressing to remain on more than a few hours. Treatment was abandoned after the third day. The result was a flail-like limb and no union. Physician, C. E. Ruth.

CASE 10.—Mr. Myers, aged 70 years, fractured femoral neck in 1892. Union with one-half inch shortening. Physician, R. H. Fegers.

CASE 11.—Mrs. Fox, aged 82 years, sustained fracture of the femoral neck in December, 1894. Result, union with one-half inch shortening. Physician, H. A. Kinnaman.

CASE 12.—Daniel F., aged 35 years, sustained fracture of neck of femur by team of horses running away. Patient was a subject of well-advanced pulmonary tuberculosis. A good union was secured, although somewhat slow on account of the

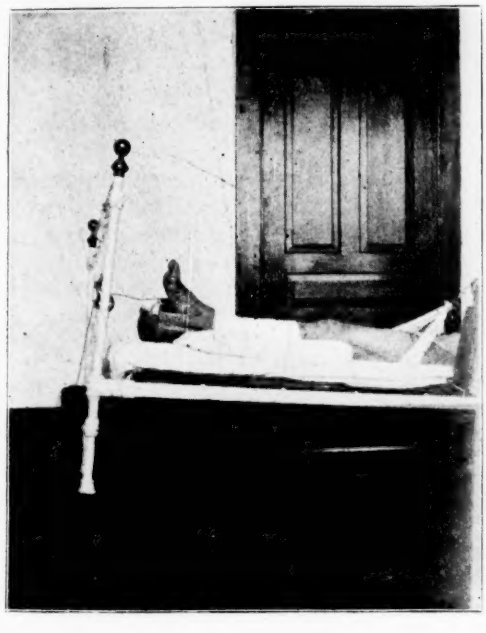
pulmonary condition. The limb was about an inch shorter than normal. Physician, J. H. Coulter.

CASE 13.—John McK., aged 80 years, fractured femoral neck by falling backward on a stone sidewalk. The case was under treatment of another physician a week before it came into the hands of Dr. Coulter, and the joint was found to be very much swollen and painful. The dressings were put on at 4 p.m., but on return next morning found them removed, and the patient absolutely refused to have them replaced. The case was then abandoned. The patient has since been seen frequently, but the limb dangles like a flail. Physician, J. H. Coulter.

CASE 14.—Mrs. D., aged 78 years, fractured the femoral neck by falling in a furrow on the frozen ground. Treatment of the case was uneventful, except that the union was somewhat tardy, perhaps on account of the advanced age of the patient. A good union was secured with only one-half inch shortening. Physician, J. H. Coulter.

CASE 15.—Mrs. Clara K., aged 40 years, sustained fracture of the femoral neck by jumping from second-story window on a brick pile. She was at first under the care of Dr. Coulter of Summitville, Iowa. Dr. Coulter frequently found the weights hung up and patient quite unruly. She would not keep quiet, and was removed at the end of one week to St. Joseph's Hospital, a distance of six miles, and operated upon at my clinic for hemorrhoids and perineal laceration three weeks later. She was quite tractable in the hospital. Result was a union with no shortening whatever. Physician, C. E. Ruth.

CASE 16.—Mrs. Dr. Nellie M.U., aged 30 years, sustained fracture of the neck of the femur in a runaway in June, 1896. A good union was the result, with no shortening discoverable after repeated measurements. Physician, C. E. Ruth.



CASE 17.—Mrs. M. J. B., aged 60 years, very feeble, fractured femoral neck Sept. 7, 1898. Union in six weeks with no shortening. The condition of this patient was very precarious for several weeks, so much so that but little hope was entertained of saving her life. Physician, C. E. Ruth.

We do not come to you with a single case in the hands of a man of slight experience, but with seventeen cases of unquestioned fracture of the femoral neck in the hands of men of large experience. In fifteen of these cases union was obtained with useful limbs in persons ranging in age from 25 years to almost the extreme limits of old age, and yet the shortening was no more than one inch in any, and after the most careful measurements no shortening whatever was discoverable in five of the cases.

In one of the cases reported with one-half inch shortening the physician in charge informed me that he could find no shortening, and that the patient walked without a particle of halt or limp, but one-half inch shortening was claimed in the prosecution of a suit brought against his employers for damages. This man fell thirty feet when the fracture was produced. In some of my own cases I am certain that I did not use heavy enough weights, and in others the treatment was interrupted occasionally by having the weight removed to satisfy some meddlesome attendant, nurse or patient.

The only failures to secure union were in two cases that absolutely refused to have the treatment carried out. I might cite you many cases of flail-like limbs from this cause, as can be done by most physicians of any considerable practice. I have had no opportunity to examine the condition of the bones post-mortem. I have no doubt whatever that in these fifteen cases bony union was obtained. Where little or no shortening took place, and the limb was functionally perfect, there can be no doubt that the union was bony.

Whatever may be the opinions in regard to repair in this bone, results that are almost perfect, and make the patient comfortable while repair is taking place, are certainly worthy of our attention, endorsement, and most earnest efforts to establish. The usefulness of this plan of treatment is not alone limited to fractures of the femoral neck, but is equally applicable to the treatment of hip-joint disease with or without operation.

In some of these cases treatment was not begun until several days after the injury, and in some the treatment was interrupted occasionally for a short time. In no case was pain complained of after the first day if weights were enough to prevent muscular spasmodic disturbance of the fragments.

By this plan of treatment the patient can be raised, if needs be, to the sitting or semi-sitting posture for the purpose of cleansing. Some of these cases had bedsores, and were lying in their own excrement and suffering severely when the treatment was begun. These were raised daily to the sitting posture, cleansed, and the sores healed during the use of the extension treatment. The patient can be easily handled in the use of the bed-pan. The method is easy of application, and only fulfills the indications we require for all other solutions in continuity of bone, viz., securing coaptation of fragments without the possible intervention of the soft parts overcomes all displacing tendencies of powerful muscular action instead of ignoring the action of more than one-half the muscles and displacing power of the limb's weight.

The results prove that it is not necessary to allow most of the fractures of the femoral neck in the aged to produce cripples for the rest of their lives, or that they should suffer, except from the confinement, and that could be scarcely less by the plan of treatment proposed than to give the patient every possible liberty during the time required for procuring union. It also proves that the influence of the synovia is *nil* as a preventive of union. I do not wish to be considered as claiming that perfect results can be confidently expected in all of these, or in fact any, fractures, and thereby invite prosecution for malpractice in every case of failure. What I do want, however, is to see the day when we will be able to lay aside prejudice and custom if need be, and use the method that will give the best results.

THE STUDY of the mosquito in its relation to malaria is being prosecuted with great vigor at Johns Hopkins Hospital. The crow is found a good subject for receiving the infection from the insect.

PACHYMENINGITIS SPINALIS EXTERNA.

RECOVERY COMPLETE.

BY F. W. LANGDON, M.D.

Professor of Nervous and Mental Diseases, Laura Memorial Woman's Medical College; Clinical Professor of Nervous Diseases, Miami Medical College; Neurologist to the Cincinnati Hospital.

AND

BY ALBERT H. FREIBERG, M.D.

Professor of Surgery, Laura Memorial Woman's Medical College; Orthopedic Surgeon to the Cincinnati Hospital.

CINCINNATI, OHIO.

J. X., aged 19, an American of Hebrew parentage, single, a salesman and clerk, was referred to the Cincinnati Hospital, neurological service, by Dr. A. V. Phelps, February 28, 1898.[1]

His chief complaint was "loss of power in arms and legs" of six weeks' duration. A few days before his admission he developed fever and a feeling of general illness which led him to apply for admission to the hospital.

Family History.—His father died of "throat consumption," at the age of 49, having been ill for one year following a wetting and severe cold. His mother is subject to acute rheumatic attacks. One brother died in infancy; one sister has inflammatory rheumatism; three brothers and one sister are living and well.

Personal History.—He has been generally healthy and remembers no illness up to 14 years of age, when he had "sore throat," lasting two days. Syphilis can positively be excluded. He had gonorrhea eight months ago followed in two weeks by pain and stiffness in the back of the neck, which he called "rheumatism." He recovered and returned to his business within a month, and was well for the succeeding five months with the exception of occasional pains in the back of the neck which did not disable him. There were no paralytic symptoms during this time.

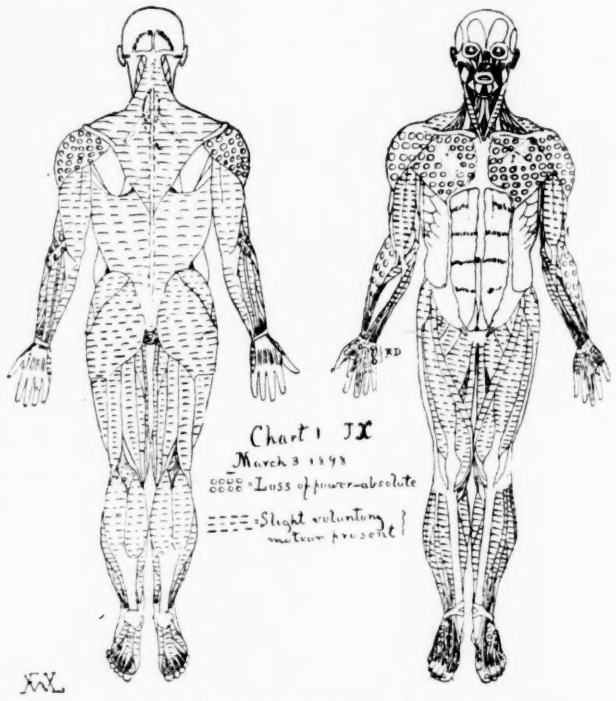
The onset of the paralysis was gradual, beginning about six weeks before his admission to the hospital and being accompanied by some pain and rigidity in back of the neck. Motor weakness began in the left arm, and gradually increased until in one week the entire limb was helpless. During this period the right arm became weak and he gradually lost the use of it. The legs were affected last; presumably simultaneously. Within a month—probably within three weeks—he was completely disabled in all four extremities. At no time previous to admission has he had any pain in his limbs, or any bladder or rectal defect. He has had no cough; has had some headache and fever for two or three days before admission. Temperature shortly after admission was 101.6—rising to 104.2 within twenty-four hours—pulse 116, respiration 30.[2]

Present State.—February 29, 1899. Height is 5 feet, 8 inches, weight 138, of medium build, dark complexion; black curly hair, dark eyes.

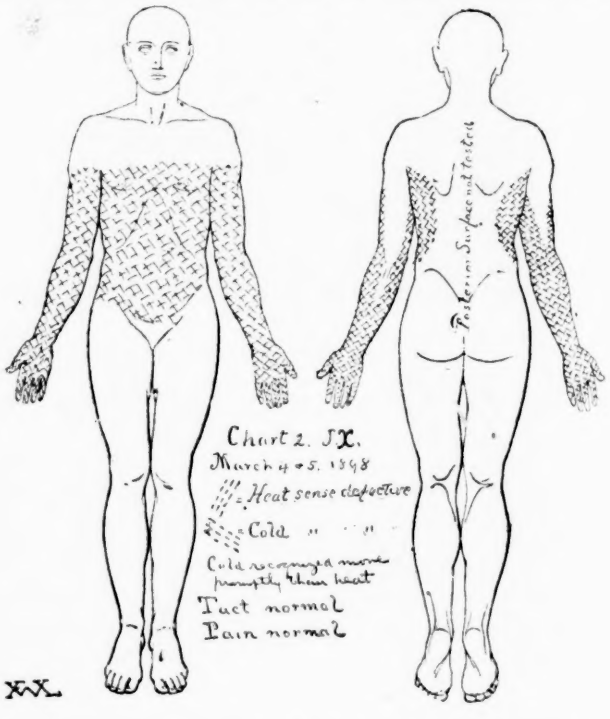
His general nutrition is good. Part of the thorax and abdomen is covered with a growth of pityriasis versicolor, which patient states has been present for six years. His neck is rigid, its tissues apparently infiltrated and indurated posteriorly. There is not much tenderness on pressure and manipulation. The left tonsil is swollen, its follicles being distended and filled with grayish-white secretion. The uvula and soft palate are bifid; no edema of larynx or pharynx. Patient can swallow and talk without much discomfort.

His mental condition is good; speech not impaired; cranial nerves not affected.

Trunk and Extremities.—Patient can not stand nor



walk: quadruplegia is present, practically complete below elbow and knees; he can flex all fingers feebly. The paralysis is moderately rigid, almost "waxy" in type. Foot and wrist drop are marked on both sides. He can flex and extend both elbows feebly. *Extension at elbows*



is notably stronger than flexion. Grasping power to dynamometric test R, 0. L, 0.

Sensation.—Tactile sensibility is somewhat diminished in acuity at the ends of the fingers, elsewhere apparently normal. Pain and temperature senses are not

[1] Acknowledgements are due to Drs. Victor Ray and John S. Boggess, internes, for their careful examination and history of the case, of which the following is an abstract, and also to our colleague, Dr. Herman H. Hoppe, for kindly permitting the use of notes made during his term of service.

[2] This pyrexia and its accompaniments are apparently due to an intermittent tonsillitis, so far as can be seen unconnected with his spinal lesion and subsiding within a few days. See temperature chart appended.

accurately tested at this date. Note change in cutaneous sensibility four days later, as shown by charts appended.

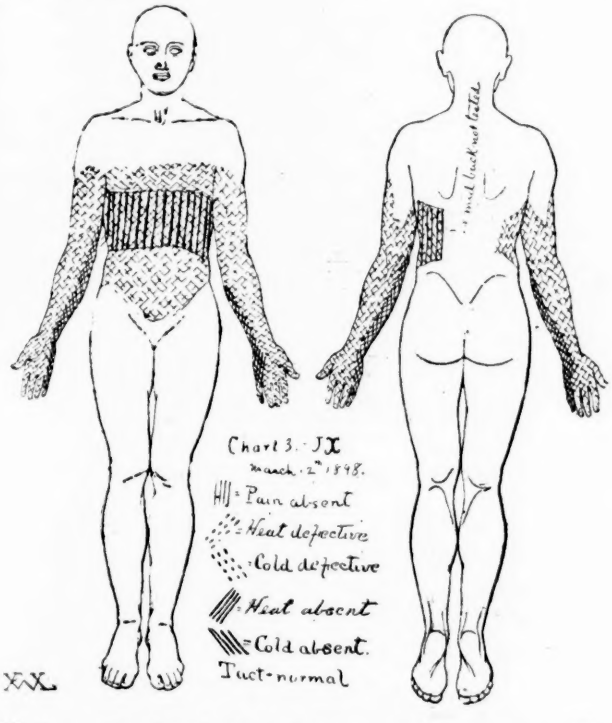
Reflexes.—Organic. No defects of deglutition, defecation or micturition. Tendon: Elbow-jerks present and equal; wrist-jerks present, active and equal. Knee-jerks present, exaggerated and equal; rectus and ankle-clonus present and equal on both sides. Cutaneous: Not observed. Vasomotor system: Patient sweating freely. Trophic: No muscular atrophy observable to ordinary examination. No trophic ulcerations.

Urine.—Reaction acid, barely; sp. g. 1030; phosphates in excess; albumin and sugar absent.

Blood-count shows a moderate leucocytosis (16,500.) This was probably due to the intercurrent tonsillitis.

July 10.—A tuberculin test, with m. xv of a 1-250 solution was followed in two hours by headache, and chill and sweating in twenty-six hours. Two days after admission the acute tonsillar inflammation subsided, the temperature dropped to normal, and for the next four weeks fluctuated between 98 (a. m.) and 100 (p. m.), only once during this time rising 2 degrees above the 100 mark. After the two weeks following this period, the temperature varied between 98.4 (morning) and 99.4 (evening). (See chart appended.)

Re-examination four and five days after admission. (See chart No. 1.)



Motion.—Quadruplegia, of waxy, rigid type is still present. The pectorals, deltoids, supinators, small thenar muscles, and short extensors of toes seem absolutely powerless on both sides. Elsewhere the muscular power is barely sufficient to flex and extend joints, extension seeming rather stronger than flexion at the elbows.

The tongue protrudes in the median line, is longitudinally fissured, and a general fibrillary tremor of the entire organ is present.

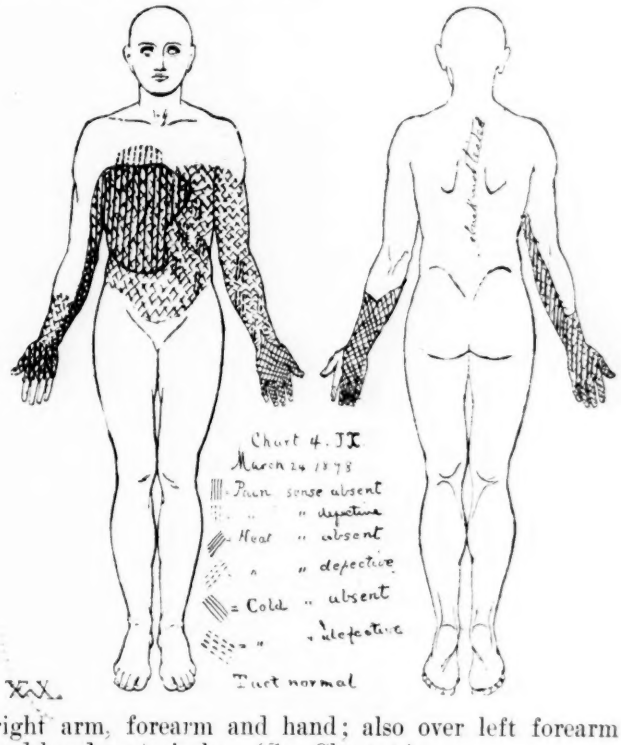
Sensory defects of a "dissociation type" have appeared as per Chart No. 2. These consist practically of diminution and loss of appreciation of heat and—to a less degree—of cold, with preservation of tact and pain over thorax, abdomen and upper arm anteriorly, and on forearm and hands anteriorly and posteriorly. (See Chart 2.) Tests were made in the ordinary manner with test-tubes of decided warm and cold water for temperature, cotton and pin for tact and pain. A week later (see Chart 3) these sensory defects were increased by addition of an area of *analgesia* over the thorax anteriorly. At this date power in legs has apparently increased, so that he can move both feet and legs with considerable freedom as he lies in bed.

Reflexes.—Pupils are moderately dilated when at rest, respond well to accommodation and contract to light, but do not dilate farther when light is excluded. Organic: Has to be catheterized for a day or two. Vasomotor: Well marked "tache" over thorax and abdomen. Trophic: No "bedsores" or other ulceration.

March 17.—Electrical tests now and later showed partial R. D. in muscles of hypothenar group of right hand, as evidenced by very sluggish contraction to galvanism and nearly equal responses to both poles, though K. C. is slightly greater than A. C.

Muscles elsewhere react normally to galvanic and faradic currents. There is slight improvement in power of legs and arms.

Twelve days later the motor symptoms were practically unchanged, the defects of heat and cold sense were somewhat diminished in area, but persisted on thorax and a longitudinal strip along the inner surface of the



right arm, forearm and hand; also over left forearm and hand posteriorly. (See Chart 4.)

March 29.—About this time I asked my colleague, Dr. Freiberg, orthopedic surgeon to the hospital, to see the patient, and it was decided by his advice to make extension on the entire vertebral column in the hope of relieving the pressure which was presumed to exist on the upper cervical cord. The effect of the extension and counterextension on the sensory symptoms was startling. Twenty-four hours after application of the apparatus, it was difficult to detect any sensory loss over thorax or abdomen, and when found it was in such irregularly scattered patches as to make its accurate charting impracticable. By April 10—twelve days after application of extension—the only remaining defects were a loss of temperature—heat and cold—sense over right

hand, palmar and dorsal surfaces; and over the left hand, dorsal surface only. The case was now transferred to the care of Dr. Freiberg, who furnishes the following:

SURGICAL HISTORY.

On March 28 I examined the patient whose condition has been accurately described by Dr. Langdon. I found present, exclusive of the nerve symptoms already described, a considerable, firm, diffuse swelling immediately below the occiput and extending downward to the fourth cervical spine. Without any distinct boss it was sufficient to render indistinct to the touch the vertebral spine. There was considerable tenderness on pressure complained of in the whole swollen area.

There was no torticollis whatever, but the patient was unable to rotate the head with freedom. Likewise it was impossible for him to bend the cervical spine backward to the normal extent. There was some interference with the power of approximating the head toward either shoulder. The nodding motion was not interfered with. Examination of the pharynx failed to show anything abnormal.

The diagnosis of tubercular disease of the upper cervical spine was made with some reserve, especially with regard to its exact localization. The treatment consisted in the application of weight and pulley extension to the head, the weight of the body serving as counter-extension. The weights were increased gradually from three to twelve pounds.

The change in the patient's condition has been spoken of by Dr. Langdon as startling; this is by no means an exaggeration. The improvement was, however, steadily progressive from this time forward.

June 4.—The appetite is good; no fever; no pain; less rigidity. He can move his neck with considerable freedom; also all joints of extremities. Grasp: dynamometer R. 50, L. 46; knee-jerks exaggerated; R. and L. ankle-clonus present R. and L.

The patient was kept in bed with the same weight attached until Aug. 4, 1898. At this time an examination showed an apparently complete return to the normal in every regard save one—the power to rotate the head laterally. The extension was therefore removed and a Sayre jury mast applied. On August 22 the patient expressed a desire to leave the hospital and was permitted to do so, wearing no apparatus, and he walked out of the hospital without assistance. About six weeks ago I had an opportunity of examining the patient, and his condition remains the same. A very slight interference with rotation of the head and the induration about the upper spinous process, which has never disappeared entirely, are all that remained of the conditions found upon the first physical examination of the neck. The patient asserted that his muscular power had returned in full degree.

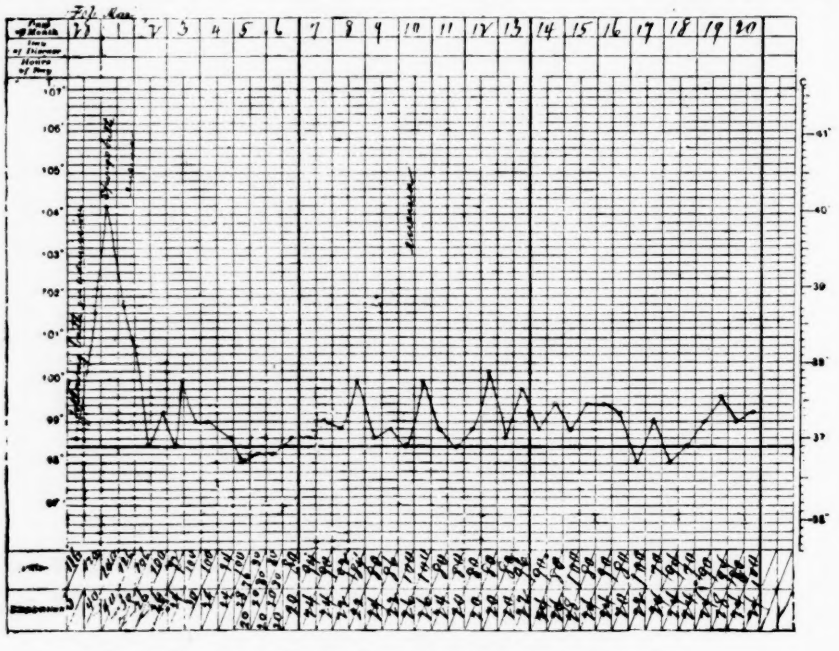


Chart 5, J.X. Pachymeningitis Spinalis Externa.

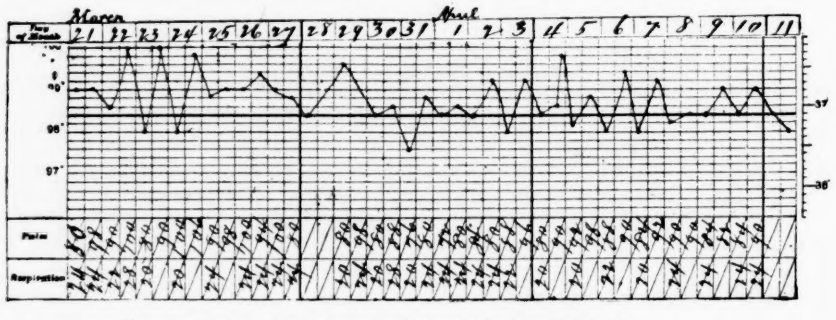


Chart 6, J.X. Pachymeningitis Spinalis Externa.

ADDITIONAL COMMENT AND SUMMARY.

Since leaving the hospital the patient has been under our separate and joint observation at intervals of a few weeks. His health remains good and he attends regularly to his duties as salesman and clerk in a store.

Neurologic examination May 19, 1899, by Dr. Langdon: Height, 5 ft. 8 inches; weight, 138 pounds; general nutrition good.

Temperature, 99.2, after dinner and active exercise; pulse 72, regular. A slight fullness is apparent about the fourth or fifth cervical spines. Head movements are free as regards rotation and extension; somewhat limited as to flexion forward—can not touch manubrium sterni with chin. There is no muscular atrophy; no defect of gait or station. Power is good in all extremities. Grasp: dynamometer R. 105, L. 98—normal average about 80. The same dynamometer was used as in former tests.

Sensation.—No subjective sensory symptoms; no defect of tact, pain, temperature or muscle sense.

Reflexes.—Organic: No bladder or rectal defect, no dysphagia. Myotatic: Elbow and wrist-jerks present; right rather more active than left; knee-jerks somewhat hyperactive and equal. Rectus-clonus and ankle-clonus absent. Cutaneous: Palmar absent; epigastric, hypochondriac, abdominal and cremasteric present; normal. Plantar present, giving marked "flexor[3]" responses in both feet.

Diagnosis: Having in view the quadruplegic type of paralysis, the possibilities to be considered were: 1, cerebral diplegia; 2, poliomyelitis anterior; 3, multiple neuritis; 4, cervical myelitis; 5, spinal tumor; 6, hematomyelia; 7, hematorrhachis, external or internal; 8, leptomeningitis spinalis; 9, pachymeningitis spinalis interna; 10, pachymeningitis spinalis externa.—primary, *a*, rheumatic; *b*, gonorrheal; secondary *c*, tubercular (vertebral caries.)

Cerebral diplegia was readily ruled out by the history, the gradual onset, and absence of mental, aphasic, or cranial nerve symptoms. Poliomyelitis is excluded by the rigid type of paralysis and the presence of marked sensory defects. Multiple neuritis was not indicated by the history, and was further eliminated by the absence of pain, tenderness and muscular atrophy. Cervical transverse myelitis would have presented sphincter defects and trophic lesions, which were absent. Spinal tumor is conspicuous for the presence of root pains, which were absent. Gumma was excluded by lack of evidence of syphilis; and as already stated, syphilis is absolutely excluded in the case by recent developments of a most convincing nature.

Hematomyelia and hematorrhachis have a sudden onset with rapid improvement if the patient lives. Leptomeningitis was contraindicated by slow onset, the absence of pain or hyperesthesia on movement of the spine, the evident localized character of the lesion, with little tendency to spread. Pachymeningitis interna was excluded by absence of adequate causes, as syphilis, alcoholism and trauma; also by absence of marked pain, and irritative root symptoms, as well as absence of the later muscular atrophy. Thus, by a process of exclusion a tentative diagnosis of pachymeningitis externa was reached, but whether this was primary, i. e., rheumatic or gonorrheal, as the history might suggest, or secondary to vertebral caries, as the heredity and part of the symptomatology would indicate, is perhaps an open question.

As Dr. Freiberg has stated, the diagnosis of tubercular disease of the vertebra was made with some reserve by both of us. Gowers[4] states on this point: "When clear indications of caries precede the paralysis the nature of the case can hardly be mistaken . . . When the two develop together mistakes are often made, but are usually due to the want of repeated examination of the spinal column. It is when the root or cord symptoms precede distinct evidence of bone disease and when the latter is so slight as to be equivocal that the chief real difficulty in diagnosis occurs." It will be seen that the case here recorded comes under the third condition described above.

To sum up: The symptoms indicated an increasing pressure of exudate with its incidence at the first and second cervical segments of the cord anteriorly, thus compressing the ascending anterolateral tract of Gowers —temperature sense symptoms—and the pyramidal tracts before their complete passage into the lateral columns. In no other situation is it possible to conceive an external lesion causing the motor symptoms here presented, viz.: quadruplegia with waxy rigidity and without muscular atrophy of the arms. The slight electric changes noticed in the hypothenar group of right hand were doubtless due to a nerve-root involvement lower down; as was the absence of pupilary dilatation on removal of light.

Against the presence of primary vertebral disease are the supposed "rheumatic" constitution, the preceding gonorrheal infection, the absence of trauma. In favor of primary vertebral disease of tubercular origin are the hereditary factor, the tenderness on pressure, with thickening over cervical spine; the reaction to the tuberculin test, which, however, was much delayed; and finally the doctrine of probabilities, as well as the favorable outcome.

Treatment.—In addition to the surgical treatment proper, of extension and counterextension, potassium iodid was given in twenty-grain doses for about one month following his admission to the hospital. Cod-liver oil and hypophosphites were also administered, and the patient was kept in the open air whenever practicable.

[3] See Collier, "Brain," 1899.

[4] Manual of Diseases of Nervous System, vol. i, p. 251.

MEDICINE.

ITS PROGRESS, PROBLEMS, AND PROSPECTS.*

BY J. BRUYERE, M.S., M.D.
SURGEON TO MERCER HOSPITAL.
TRENTON, N.J.

(Continued from p. 446).

Many of the forty odd specific infectious diseases are now known to be due to micro-organisms. For a long period germs had not been isolated, and no cultures or inoculations had been made; hence, the only proof of their action in disease was the constancy of their presence in infectious diseases. This led many to believe that organisms might be the result, rather than the cause of disease. Some thought that organisms were present in healthy tissues, and could not be the cause of disease. Koch, in 1881, and subsequently, by his careful scientific methods, did much to establish the foundation of bacteriology. He demonstrated the distinct varieties of infection, the possibility of isolating their germs, of making cultures, and inoculating animals by the same. He first used for bacteriologic purposes, the Abbe system of substage condensing apparatus, the aniline dyes, the cultivation of bacteria on solid media, etc., and furnished many original and important suggestions. Such in brief, is the history of bacteriology, which has such a marked influence in revolutionizing etiology, pathology, and the principles and practice of medicine. The modern germ theory of disease now fully explains spontaneous generation, fermentation, putrefaction, infection, etc.

* Read before the Mercer County (N. J.) Medical Society, at its Fiftieth Anniversary, May 23, 1898, and subsequently revised.

The discovery of minute organisms and the study of their life history, their culture and growth, their likes and dislikes, their secretions and chemical character, is teaching us the origin of the infective maladies and the laws of their development.

The study of microscopy and bacteriology has established a new era in the practice of medicine by giving to etiology and pathology a new impulse and many scientific truths. Twenty-five or thirty years ago the uses of the microscope were limited. There was no section cutting, no staining process, no oil immersion or apochromatic lens. But little was known of etiology or pathology. An ocular description of morbid changes was given, with but little knowledge of how or why these changes took place. This constituted morbid anatomy, which was afterward changed to the science of pathology by the advance in bacteriology and microscopy. The "cell theory," and the "germ theory" established modern pathology. In pathology system followed system, but these have all perished and been replaced by cellular pathology, which is the accepted theory of to-day. Hooke discovered plant-cells and later animal cells were discovered by Schwan and cell-nuclei by Robert Brown. Hooke, in 1667, introduced the term "cell," and Malphighi and Grew did much to establish the "cell doctrine." Merbel, in 1806, and Johannes Müller, in 1835, more elaborately described cells, but it remained for Schwann, in 1839, to establish the "cell theory." Schleiden, Baumgärtner and Schwann, proved the cellular origin of the various vegetable and animal tissues, and their investigations became the foundation of all modern histology and led to Virchow's "cellular pathology," and the development of microscopic botany, etc. In 1858 Virchow formulated his doctrine of "modern vitalism," which is the cell-theory of the present day. He showed that every organism is composed of an aggregation of cells, and that every cell has an individual existence, a unity and purpose of its own. He expressed a strong belief in the continuity of living matter. This belief he recently reaffirmed in a most impressive manner. At the twelfth International Medical Congress, lately held at Moscow, he reiterated with great earnestness his view of cellular life. "Life," he said, "has no other origin than from life itself. Life is in the cell. He who speaks of serum as a vital force apart from cells is wrong. The grand truth of cellular succession may be assailed in the future, as it has been in the past, but it will never be thrown to earth." In 1856 Virchow introduced microscopic anatomy, and in 1866 published his great work on "Tumors." He demonstrated the fact that the blood is not the prime cause of dyscrasia, as Andrel supposed, but only the medium through which dyscrasia is produced. He also showed that pyemia accompanies thrombic processes and is not due to the absorption of pus. Accepting the "cell" and the "germ theories," and by the use of the microscope and scientific methods, he, more than any other, established the modern science of pathology.

The first pathology written in the English language was by Gross, in 1839, but still in 1848 pathology was almost an unknown science. The first pathologic society was founded in Dublin in 1839. The New York Pathological Society was founded in 1844, the London in 1846, and the Philadelphia in 1857. The rapid advance in bacteriology and pathology has taught us much about the processes and causation of disease, and has greatly modified the principles and practice of medicine. Not only did bacteriology revolutionize pathology and etiology, but it gave rise to hygiene, preventive medicine, sanitation, boards of health, the knowledge of infection, serumtherapy, immunization, antisepsis, asepsis, etc. We can only briefly allude to these. When Jenner discovered the principles of vaccination, little did he think that his virus would become the forerunner of the antitoxins, and be suggestive of serotherapy, immunity, or preventive medicine. Scientific investigation into the nature and cause of disease has led to natural methods of cure—to organotherapy, serumtherapy, antisepsis, etc. Organotherapy aims to supply to an organism the chemical or vital elements which it requires. These elements are the animal extracts, which are secured from the glands and tissues of the body—such as thyroid, thymus, and lymphatic gland; the brain, heart, stomach, kidneys, spleen, pancreas, testes, ovary, uterus, blood, bone-marrow, suprarenal capsule, etc. When there is loss of function of these glands or tissues the extract from a corresponding healthy organ or tissue is given to supply the deficiency, and must be continued regularly, just as food to relieve hunger. Whatever the function of the thyroid—whether to change or destroy injurious substances in the blood or to secrete substances to aid in the development of bones, muscles and nerves—its secretion passes directly into the blood, where it has a physiologic action. When the thyroid gland is removed, or its functions impaired by disease, as in myxedema, cretinism, and exophthalmic goiter, it has been ascertained that the pathologic conditions engendered are removed or greatly improved by the administration of thyroid juice, extract or powder. Thyroid secretion or extract has been used to great advantage in anemic obesity, struma, uterine fibroids, uterine hemorrhage, at menopause, epileptic psychosis, acromegaly, rachitis, Basedow's disease, mild cases of diabetes, psoriasis, lupus, ichthyosis, eczema, pityriasis rubra, alopecia and various kinds of insanity. Idothyrin—the active principle from the thyroid gland—seems to be less objectionable and just as useful. The pituitary body may be of use in acromegaly, and bone-marrow in anemia. If the suprarenal capsules are removed, emaciation, feebleness and death follow, but if injections of the fresh extracts of the organ are given death is at least retarded, if not averted. Suprarenal extract is used in eye diseases, etc. It is a powerful astringent, and is sometimes injected into the eye, and upper air-passages, with good results in congestive conditions. It is also a heart tonic, and may increase the red corpuscles, and act as a vasoconstrictor, etc. Brown-Séquard's testicular juice is no longer regarded as an elixir of life, although it accomplished considerable through auto-suggestion. Babes and Paul have made the glycerin extract from the brain, which may remedy some of the defects of nature, by increasing cerebral activity. Other glandular extracts are given with varying results, and the time may not be far distant when organotherapy has a well-defined field of usefulness. Nevertheless, animal therapeutics remain yet to be developed, for physiologic chemistry, experimental physiology, and clinical observation have yet to determine the definite uses of the animal extracts.

Serumtherapy, though still in its infancy, promises brilliant results. Richet, in 1889, claims to have given the first serotherapeutic injection, and Bouchard, in 1890, published the first contribution on serumtherapeutics. Behring and Kitasato, in 1890, showed the nature and effects of antitoxic serum on the fixed tissue-cells, and in 1892 Behring showed the splendid results of serumtherapy on diphtheria. Diphtheria antitoxin not only has immunizing qualities, but is also a veritable remedy—having reduced the mortality from 47 to 8 per

cent. The serum treatment for bubonic plague has been demonstrated to be of great value. The serum treatment of pneumonia is also said to be very successful in Italy. De Renzi, Ughetti, Cantieri, Messolongo, and others declare that "it is more efficacious than any other agent." Wasserman lately reports excellent results. Haffkine's vaccinations for cholera are said to afford considerable protection against this disease, vaccinated persons being twenty times safer from attack, and eighteen times securer from death than the unvaccinated. Out of over two hundred coolies inoculated by Dr. Hare under Haffkine's direction, only 2.55 per cent. died, while among the inoculated 19 per cent. died. Sanarelli has prepared a serum that has reduced the mortality in yellow fever from 50 to 27 per cent. Bird serum, according to Behring, is superior to horse serum and other animal serum, in tuberculosis, still antituberculous serum is not very favorable in its results. The antistreptococcic, antisyphilitic, antityphoid, antitetanic, antisnakebite, and many other serums have been used with varying results, but space will not permit their further enumeration. Lately the mixed toxins have been used with good results in the treatment of disease. It is claimed that the mixed toxins of the streptococcus of erysipelas, and the bacillus prodigiosis, have been used in the treatment of sarcoma, with marked results.

The knowledge of the infectious diseases that bacteriology gave us led us, as we have previously stated, to a better knowledge of vaccination, and developed the idea of serumtherapy for its curative and immunizing properties. It also developed and gave a new meaning and impulse to hygiene, sanitation, boards of health, or preventive medicine, and finally led to Listerism, antisepsis, and asepsis. The origin of the infectious diseases being known, their prevention became apparent. Dirt no longer possessed the odor of sanctity, but became the symbol of death. That "cleanliness is next to godliness" is also the teaching of bacteriology. The Mosiac laws enjoined cleanliness, isolation of the sick, and wholesome food and drink, hence the Jews enjoy a remarkable immunity from epidemic diseases. A greater knowledge of hygiene has led to greatly decreased mortality. Two centuries ago, the mortality in London was 80 per 1000; it is now 18 per 1000. A century ago scurvy was to be found on nearly all ships, and jails and hospitals were the hotbeds of disease. Thirty years ago the English troops at home died at the rate of 20 per 1000, now the death-rate is less than half this amount. In the fourteenth century the plague or black death is said by Wingate to have destroyed "13,000,000 people in China, 24,000,000 in Oriental countries and not less than 25,000,000 people in Europe." Cholera, yellow-fever and smallpox have also been epidemic for hundreds of years, and cost millions of lives. In Jessora, India, in 1817 more than 10,000 people died of cholera in two weeks, and in Benares in 1818, 15,000 died in two months. In 1878 there were 15,934 deaths from yellow fever in Louisiana, Tennessee, Alabama and Mississippi. Smallpox exterminated whole tribes and almost wiped out whole nations. In Mexico it attacked "3,500,000 of the population, leaving no one to bury them." Dr. Crighton estimated that in Russia "every seventh child died annually of smallpox," and Colon tells us that in France the annual number of deaths from smallpox was from 60,000 to 72,000. When bacteriology revealed to us the cause of these deadly infectious diseases, boards of health were appointed as guardians of the public health. In 1865 Louisiana appointed the first state board of health to cope with yellow fever; but this had such limited powers and was so brief in its existence that the Massachusetts State Board appointed in 1869 should be regarded as the first actual state board in the Union. Now nearly every state and town has its board of health. France, Germany and England have their national boards of health, or departments of health; but the United States is still lacking in this.

Increased knowledge as to the cause of many diseases has led to the adoption of preventive means. The adoption of public health acts by sanitary authorities has increased the general health, especially among the poor. The mortality from smallpox, says Parker of London, has diminished 96 per cent.; deaths from fevers have declined 82 per cent.; deaths from typhus 95 per cent.; deaths from enteric fever 60 per cent.; deaths from scarlet fever 81 per cent.; and deaths from phthisis 46 per cent., and diphtheria about 59 per cent. The decrease in the deaths from malaria and many other zymotic diseases has been very great. Parker says that, "the general effect of improvement in sanitation is that 600,000 persons reached the age of twenty-one, who sixty years ago would have died." Skillful operations and appropriate medicines have saved many, but preventive medicine has saved far more. Through preventive medicine, which is now being established on a scientific foundation, infectious diseases will soon become unknown in civilized countries. To this end individuals and communities must act in accordance with well-established hygienic laws. Increased diagnostic skill has done much for preventive medicine. Diagnosis is now arrived at by a process of reasoning, not by intuition as formerly. An elaborate description of symptoms no longer takes the place of accurate diagnosis. We no longer base diagnosis and treatment on the theories of disease. Diagnosis is now the result of scientific precision in methods of thought and observation, together with a skillful use of instruments of precision. By such methods, we now quickly and definitely recognize many diseases that were formerly recognized only after long periods of observation and many autopsies. Time is thus gained by an early and precise diagnosis, and the community, by being forewarned, is largely forearmed, so far as epidemics are concerned. Modern diagnosis, therapeutics, and operations all aim at prevention. And yet we are told by Gould, that more money is devoted to astronomy than to the prevention of disease. Men seem to be more interested in the stars and constellations than in their bodies or physiologic life. Nevertheless, the progress of the age in which we live is characterized by preventive medicine, and private and public hygiene. This fact is a monument to the honor and glory of medical men, rather than to the laity, who have done more for astronomy than for preventive medicine.

Prevention is far better than cure. This is the medical idea, object and aim of the future. We now have a proper respect for Hygeia—the goddess of health. We no longer respect ascetics, dyspeptics and pale melancholics. Those pale, devitalized, saintly people, filled with negative goodness and amiable tameness are insipid, and incapable of those positive, robust, aggressive virtues, so much in demand at the present day. Good digestion and assimilation—or good health—the prevention of disease—is the sub-stratum of happiness, of usefulness and of morality. The great object and aim of medicine is to secure and maintain health, or to prevent disease. If this is so, should not doctors strongly and unitedly protest against the violation of the laws of

heredity, which produce so much disease. Why should not syphilis, consumption, scrofula, epilepsy, inebriety, insanity, criminal tendencies, etc., be a restriction to marriage? The increase of degeneracy is largely due to the violation of the laws of heredity, and to unregulated marriages. The altruism that is a product of civilization protects the degenerates and fosters abnormalities. This is an age of charities, of asylums, hospitals, reformatories, prisons, sanatoriums, and eleemosynary institutions of every kind, and the demand still increases. Christian civilization, by reversing the Darwinian law, makes the survival of the unfittest a possibility. Our social and political institutions and the general welfare of the race require that the wholesale production of abnormalities cease. Is there any just reason why the insane, epileptic, syphilitic, consumptive, and other degenerates, should marry and bring into the world those who are a burden to themselves and to the society? Is it altruistic to permit the propagation of hereditary disease and crime? Do we not owe something to humanity? To entail disease, evil tendencies, degeneracy, on a child—is this not cruel and unkind? Is not marriage under such circumstances based on sentiment, rather than upon reason and justice?

Degeneracy has become such an enormous burden to society, such a blight on human happiness and well-being, that the laws of heredity must be considered, and marriage must be regulated by the law of conscience, if not by the law of the land. The future altruist will consider the methods of preventing degeneracy, rather than methods of cure. We now have sanitary laws, and we will then have hereditary laws to protect posterity. A parent is not allowed to give material poison to the offspring, so as to produce weakness, disease and death, but he is allowed to transmit congenital and moral poison to his offspring, and thus consign it to a fate worse than death. A better civilization will remedy this. We now have laws to protect the bodies from external disease; we will then have laws to protect the child from inherited disease. Prevention is the watchword of the future, for individuals and nations alike. Herein lies the hope of the physician, of the individual, and of the nation. Preventive medicine will teach people how to live and will be the index of a higher civilization. We need a higher moral education based upon the study of medicine. The grandest study for mankind is man. Seven thousand murders take place annually in the United States, and about 122 legal executions, and 131 lynchings. There are about 100,000 orphans, and, according to J. S. Billings' statistics for 1890, there were 106,252 insane; 95,571 imbeciles and idiots; 50,411 blind; 41,283 deaf-mutes; 73,095 paupers, and 86,000 prisoners. It is said that from 65 to 75 per cent. of crime, imbecility, and insanity is due to heredity, and yet only about one-tenth of the criminal offenses are detected and punished. During the past ten years crime has increased 60 per cent. When we consider the great increase among the delinquent, defective and dependent classes, who are filling to overflowing our prisons, asylums, and reformatories, and when we consider the enormous burden they are to society, should we not as physicians do all in our power to prevent this great increase in degeneracy? With this general consideration of preventive medicine, we will pass on to the consideration of the prevention of infection by means of antisepsis, which was originated by Lister.

In 1867 he first published his experiments on the antiseptic treatment of wounds. His theories were received with distrust and contempt, and it was said that "the man who would claim to heal wounds without suppuration was a visionary." Not until about twenty years after this publication was antiseptic surgery fully accepted and developed. Gross, "the Nestor of American surgery," in his "System of Surgery" (1882 edition), says that although various observers "have established the existence of myriads of low forms of organisms in our breathing atmosphere, the demonstration of living, disease-producing germs is wanting." He thought that putrefaction, suppuration, blood-poisoning, etc., were induced by "epithelial, and pus-cells, and other particles of organic matter" held in suspension in "the atmosphere of ill-ventilated and long-occupied hospitals." The true causes of abscess, septicemia, hospital gangrene, erysipelas and tetanus, were at this time still *sub judice*. Lister, at first, supposed that micro-organisms existed principally in the air; hence, ligatures, instruments, dressings, sponges, etc., were only cleansed. He soon ascertained that spraying the air was not sufficient, as everything that came in contact with wounds might contain germs. Following this idea, the skin of the patient, the hands of the operator, and all bandages, ligatures, etc., were made free of germs by antiseptic solutions. Germicidal agents now came rapidly in vogue, and Lister not only filled the operating-room with the vapor of carbolic acid, but antisepticized all tissues and surgical appliances. Observation soon demonstrated that the air did not contain so many deadly germs as supposed, and that such persistent and strong irrigation was not only not essential, but irritated the tissues, and was injurious. Dressings that had been sterilized by dry heat, live steam, or boiling water, were found effective; hence, it became apparent that antiseptic solutions were to be used to irrigate tissues only when some septic material was to be washed away.

Thus the antiseptic gave way to the aseptic, and the old adage, "prevention is better than cure," was again confirmed. The germicidal powers of the vital tissues later became known, and the necessity of strong antiseptic fluids, which irritated and impaired the power of these tissues, was found to be limited. From these observations it was found that the aseptic, and dry method, is a great improvement over the antiseptic method. Before Lister's great discovery of antisepsis, our hospitals were hotbeds of contagion. Fevers, blood-poisoning, erysipelas, suppuration and hospital gangrene were very common. When pain was abolished by anesthesia, operations increased in number, and as nothing was known of antisepsis, there was unfortunately a corresponding increase in hospital diseases. Forty years ago the operating-room was said to have been the dirtiest room in the hospital. Sawdust was strewn over the floor to catch the blood, and the surgeon wore his dirtiest garments, which were sometimes "stiff with blood and animal filth." "He was as proud of this blood-stained rag as a peer of ancient lineage may be of his faded ceremonial robes, and he would step into the operating-room, like a great matador into the ring," and proceed with the operation, which was followed by horrible moans and shrieks, entreaties and curses. During these horrible times it was regarded as "indecent, unwomanly, and revolting," for a nurse to enter the hospital. Anesthesia and antisepsis civilized hospitals, and made nursing a profession of refinement and honor. Cleanliness is now regarded as next to godliness. Hospital diseases have become almost a thing of the past, and mortality records have been greatly lowered. During the Civil War, in

the Massachusetts General Hospital, which had a world-wide reputation for neatness, cleanliness and efficiency, hospital grangrene became epidemic and surgical operations had to be abandoned. There were epidemics of hospital grangrene in many of the prisons and military and municipal hospitals, and infectious diseases were common, and caused more deaths on the batttlefields than were due to wounds. In fact, during our late rebellion, there were 2642 cases of hospital grangrene reported, with 1142 deaths. Had we possessed a knowledge of antiseptics, at this time, thousands of lives would have been saved. We no longer have such wide-spread epidemics of erysipelas, dysentery, gangrene, and other infectious diseases. Antisepsis has made "laudable pus, both unlaudable and reprehensible." Formerly the surgeon would go from ward to ward, handling the various cases, with unwashed hands, and spreading the contagion impartially. The risks of surgery, at such a time, were very great. In the large hospitals of Great Britian the deaths from amputation of a limb were at least one to three. Simpson collected a series of 2089 cases, and ascertained that the mortality was as high as one in two and four-tenths. In the Paris hospital the mortality after amputations was nearly one in two, and in 1861 it was three in five, and a few years later it was estimated at 58 per cent. Writing from Paris in September, 1861, Sims says, "In hospital practice almost all cases of amputation die," and attributes it to their methods of dressing wounds. In Germany and Austria, the mortality varied from 43 to 46 per cent. The mortality for amputations of the thigh, in 1840, was 63 per cent.; in 1890, 21 per cent.; but Estes, in 1894, in 77 cases, had a mortality of only 10.4 per cent. Before anesthesia and antisepsis the development of a skillful technic in the handling of surgical instruments and the dexterity and rapidity of operation were the chief essentials. Now the glass-top tables, iron bedsteads, tiled floors and walls, and the great improvement in hospital methods, in heating, ventilating, general sanitation, cleanliness and aseptic methods bespeak another age. Modern surgery owes everything to anesthesia and antiseptics.

We will next briefly consider the progress that has been made in surgery and other branches of medicine during the last fifty years. The scientific progress in surgery has been so great that no surgical genius who thirty or forty years ago went to the land of shadows could return and teach or practice modern surgery. He would not understand the surgical vocabulary, and would be more than astonished at our modern operations on the brain, chest, abdomen, and pelvis. In 1579 Ambroise Paré says of surgery, that antiquity has "nothing wherein it may exceed us, beside the glory of invention, nor posterity anything left but a certain small hope to add something." Every generation seems to think that it is the crowning glory of all the ages, and has reached the "*sumum bonum*" of all knowledge. Scarcely twenty years ago Sir John Erichsen declared that, "operative surgery had nearly reached its furthest possible limits of development," and that there were certain regions of the body, such as the brain, the heart, and the lungs, that "must ever remain inaccessible to the surgeon's knife." Goltz, Broca, Hitzig, Fritsch, Ferrier, Horseley and Macewen, during the last fifteen years, have solved many neurologic problems in cerebral surgery, and have recently created a new department in surgery. Under antiseptic precautions and a better knowledge of localized centers, the brain substance is dealt with as freely as any other structure. The motor, special sense, and cortical centers are now well known, and we are thus able to classify and localize brain lesions. We now operate for fractures of the skull, intracranial hemorrhage, abscess, epilepsy, tumors, insanity, imbecility, hydrocephalus, trifacial neuralgia, and sometimes even remove the Gasserian ganglion. We also evacuate pleural effusions, invade the lungs, and suture the pericardium, and even the heart itself. Tumors are removed from the liver, the spleen is extirpated, the great veins are sutured and tied, and the appendix—thanks to Parker and Fitz—is now successfully removed. The stomach is now opened and sutured, and the pylorus is dilated and partially or entirely removed. In August, 1897, Schlatter of Zurich successfully removed the entire stomach, which was extensively involved by cancer. Eight months later the patient had gained thirteen pounds, and was doing nicely until a metastasis of the original disease involving the mesenteric and other glands caused her death on Oct. 29, 1898, about fourteen months after the operation. This was the first case of the entire removal of the stomach with the survival of the patient. On Feb. 24, 1898, Dr. Charles B. Brigham of San Francisco successfully removed the entire stomach in a woman 66 years of age, for carcinoma. Seven weeks after the operation the patient was reported to be gaining in weight, and the condition "satisfactory in every respect." In May, 1898, Dr. George C. MacDonald of San Francisco removed the entire stomach from Jean Patriti, for cancerous involvement. Patriti has since regained his weight and health, and is said to be able to digest the ordinary articles of diet, without any discomfort or inconvenience. Cholecystectomy was first performed by Langenbuch in 1880. Pancreatic cysts are now removed, and Simons, in 1870, demonstrated the fact that the kidney is an accessible organ. A floating kidney is secured, cysts and abscesses are evacuated, calculi are removed, and sometimes even the kidney itself.

(To be continued.)

Correspondence.

Hamburg from the Medical Side.

HAMBURG, Aug. 15, 1899.

To the Editor.—Few Americans stop in Hamburg to study medicine. They rush off to Berlin or Vienna and then have the rare chance of finally finding what they want, or they work around until they are tired out or come across a real teacher. As for myself, with the advice of experienced friends, Hamburg was my first stopping place, and here I stayed for two weeks and never missed a day when I did not have a most valuable surgical clinic of from two to six hours.

Hamburg, without its suburbs, is the second city in Germany. From a clinical standpoint it is of the greatest importance and interest because it has the cosmopolitan population of a great commercial city doing a business with other cities in every part of the world, and its hospitals therefore contain examples of disease from every zone.

It is within eight days and within $50 to $100 of New York. Living in the city costs about one-half as much as in New York or Chicago. It is delightful for summer residence, rarely hot. During my visit in July the street lamps were not lighted until 10 p.m., and a newspaper can be read on the street until 10:30. The city is clean. Like Venice, much of the communication within the city is by means of canals. The medical student does not lack for opportunity for recreation.

The neglect and even ignorance of Hamburg as a place for medical study is apparently due to the fact that there is no university here. Until the Franco-Prussian War, Hamburg

was a Free City, and it still is less intimately attached to the Empire than most other territory. The city can not yet afford to undertake a medical school or university itself and the Imperial Government has enough universities on its hands already. Nevertheless, there are courses given in the various branches of medicine twice a year, at the Neues Allgemeines Krankenhaus at Eppendorf. These courses are based on the enormous clinic of the hospital. The next course begins Sept. 25, 1899, and continues three weeks. Each course costs $3 to $5. A student can get tickets for as many courses as he can attend to for $20 or $25, and he can live at a good hotel in the city for $2 a day.

The new general hospital is beautifully situated in what was once a suburb of Hamburg, and a village called Eppendorf. It is one of the best examples of the detached pavilion plan of hospital building, so popular twenty years ago when this hospital was built (1884). It accommodates 2500 patients at a time and had during the past year about 3000 surgical operations. The surgical department of the hospital is in charge of Dr. Kümmell, who is to be remembered as the author of early works on the antisepsis of the hands, and a long series of valuable surgical contributions. The hospital is reached by street cars from the center of the city, in twenty minutes, 4-cent fare, and by boat and a short walk in forty-five minutes, for 2½ cents.

Prof. Kümmell gave me an oppportunity to see him operate for the removal of a gall-stone in the common bile-duct on a man who served in the Federal army during the Civil War. The incision was slightly oblique from the beginning of the costal cartilages downward and outward, and directly through the rectus muscle. The gall-bladder was opened, emptied and closed; the adherent omentum and intestines gradually and carefully separated from the cystic duct, the border of the liver and the common duct. This seemed to open a small abscess, the border of which was a mass of gangrenous omentum. This infected surface was scraped and at last cut away, and then the denuded surfaces were brought together carefully and closed in by about two rows of catgut sutures. The common duct was then exposed by drawing up the ribs and the liver and pressing away the intestines and omentum with the hands. The duct was well exposed. No defect in it was demonstrated. The edematous and greatly thickened common duct was then opened with the scalpel directly over the impacted stone, which stone seemed to me to be in the middle or upper third of the choledochus. The duct was carefully emptied and sponged out. Into the open duct was inserted a long rubber drainage-tube about 1 cm. in diameter, and held fast there by catgut sutures, which were quickly inserted. The duct was closed tightly about the tube, also with catgut sutures. The tube outside the common duct was then surrounded with a bismuth iodized gauze and the injured omentum brought in contact with this tampon. The lower and upper corners of the laparotomy wound were then closed with a single story of silk sutures and the retracted gall-gladder was fastened into the middle of the wound by the side of the protruding drainage-tube and tampon by a number of catgut sutures. The temporary sutures, used in closing the gall-bladder after emptying it, were now removed and another long drainage-tube was passed into the gall-bladder and down into the cystic duct. This tube was carefully sewed to the protruding opening in the gall-bladder with catgut sutures, and the gall-bladder itself was tightly closed around the tube with the same material. The whole region was then covered with a large dressing. The operation was done in a most direct, quiet and masterful manner. The assistants were alert and sympathetic. One male and one female nurse, two direct assistants and two anesthetizers were the only persons present except five observers. Prof. Kümmell reached his own instruments, grasped his own sponges and threaded his own needles. Live steam was used in a small instrument sterilizer during the operation. Chloroform was the anesthetic, and it was well given.

As soon as this operation was over, the room was washed out with a hose. A young woman was brought in with a diagnosis of pyosalpinx. Dr. J. Schutz, one of the resident assistants, operated. The patient was put in the Trendelenburg position. The operation was neatly and skillfully done. A small ovarian tumor was removed from the right side and a thickened, distended and tortuous tube from the opposite side. It was a bloodless operation. Catgut ligatures were used. There was one assistant, two anesthetizers and the same nurses as before. The anesthetic was chloroform, given on the mask. The incision was long, four or five inches, and it was closed completely.

On a subsequent occasion I saw Prof. Kümmell operate on a man for the removal of stones in the cystic duct. He is accustomed, when he can remove all the stones, to perform the so-called ideal operation, which he has successfully carried out twenty-five or more times. In no case has there been any accident or necessity of opening the wound. In these cases, after the complete removal of the stones, the opening in the gall-bladder has been perfectly closed with catgut and the abdomen closed over it.

Prof. Kümmell is accustomed to use the Murphy button in intestinal anastomosis, and has had many cases where it made operating safe and easy.

In the wards of the hospital I saw two patients that had been operated on successfully for echinococcus of the liver. In one of these the diagnosis was quite obscure. The determining factor, however, before operation, was the statement of the patient that he was from Mecklenburg. This principality seems to furnish all the cases of hydatid. In another ward I saw a case of echinococcus of the hip-joint cured by operation. This patient also came from Mecklenburg. Three cases of lupus of the face and nose, almost completely cured by the use of the X-rays, interested me very much. Two of these patients seemed completely cured. Prof. Kümmell informed me that he had treated twenty such cases successfully with no other therapeutic measure. The exposures are made at a distance of nine or ten inches, once or twice a day for fifteen to twenty minutes at each exposure. This treatment is kept up four to six months. The earlier patients suffered a few slight burns, but otherwise the treatment has been without accident. When we consider the unsatisfactory treatment of lupus in all medical and surgical experience, this seems to indicate a great advance in therapeutics. (v. Kümmell Hollander'sche Heisluft behandlung des Lupus, *Munchen Medicinische Wochenschrift* 1897, No. 51.) At the Altona Hospital the X-rays have been used with equal success, both alone and combined with conservative surgical treatment. It seems to be reliable. At the old general hospital, the use of the X-rays on lupus has not been so successful.

Another case that is worthy of more than a passing notice was resection of three inches of the femoral artery for sarcoma. The operation had been performed fourteen days previous to my visit. The foot and leg were warm and comfortable. In the course of this operation it was found necessary to remove a portion of the artery. Rubber-protected intestinal clamps were put on the artery, which had been exposed for a considerable distance above and below the tumor. The tumor and the surrounded artery were then removed. The distal end of the artery was then closed with sutures, and the proximal end was drawn down and implanted in a slit in the side of the distal portion in the manner suggested by Dr. Weller Van Hook for the ureters. (Surgery of the Ureter, JOURNAL, vol. xxv., Nov. 16, 1895, p. 842.) As soon as the clamps were removed the leg, which had become cold and blue, instantly became pink and warm. Sufficient length of artery was obtained by slow gentle pulling and by flexing the leg. This seemed to me a

most brilliant surgical victory. It is the first case treated by that method by Kümmell, and added only twenty minutes to the duration of the operation. In a similar case the crural vein was treated in the same way with equal success. Prof. Kümmell has made several side-to-side anastomoses of large blood-vessels, but he considers this method preferable.

In all his operating, in his treatment of assistants, nurses and patients, Prof. Kümmell is ideal. He is a kind, genteel but strong and masterful man. When he came into the children's ward they gave him a shout as salutation, and a number of the children held on to him as to their fathers. This is not according to our ideas of the German physician, but he seemed to have the entire confidence and sympathy of his assistants and nurses, and in all he was most unassuming.

At the Altona Krankenhaus, which takes care of the 120,000 laborers of Altona, when they are sick, and is truly a city hospital, it was my privilege to see Prof. Fedor Krause in company with Prof. Keen of Philadelphia. This hospital has about 3000 patients, and 1400 surgical operations are performed each year. It is admirably located in a beautiful garden, and is compactly built. It is thoroughly equipped with every adjunct to medical and surgical treatment. Prof. Krause will be remembered as the author of a monograph on the extirpation of the Gasserian ganglion for a facial neuralgia, and of the volume of "Deutsche Chirurgie on Tuberular Diseases of the Bones and Joints," the second and greatly enlarged edition of which has just appeared. He is a genial and attractive man of about 40, with a quick eye and ready hand. His technic is said by those who have seen much of his work to be direct and expeditious.

One of the most remarkable cases in the hospital at the time of my visit was a 14-year-old boy on whom Prof. Krause had four days before extirpated the urinary bladder for sarcoma, and implanted the ureters into the colon. The diagnosis was made by the cystoscope and suprapubic cystotomy. The bladder was removed by blunt dissection down to the ureters. These were ligated and the prostatic portion and urethra cut away. The seminal vesicles and ducts were left intact. This part of the operation was done without opening the peritoneal cavity, except for one or two minute tears which were immediately closed. The ureters could not be brought down to the rectum, so a coil of the sigmoid flexure of the colon was drawn forward and both ureters implanted in it. The cavity from which the bladder had been removed was then packed with gauze to stop the oozing from the prostatic and urethral portion. During the first day the urine was slightly bloody, but after that it was clear and contained only a trace of albumin; 1400 c.c. were collected each day, in a urinal between the boys' legs, by means of a rectal tube passed up to the sigmoid. It was a very impressive sight to see this large quantity of perfectly clear urine coming out of the rectum. The small trace of mucus was easily filtered out and then there was no albumin. The operation lasted four hours. Chloroform was used. The patient was in perfect condition when I first saw him. When the bladder was first removed it was carefully washed and the hole in the fundus completely closed. The interior of the bladder was then filled with formalin solution and stuffed and the distended specimen put in the same solution, to harden. It was a most perfect dissection. Both ureters could be easily seen and the nodular tumor covering and infiltrating over one-half of the bladder wall. When the boy was dressed the first time, ten days after the operation, the wound was clean, and was healing. The boy passed his urine at that time voluntarily by the rectum once every two hours. He was in splendid condition.

Both at Altona Krankenhaus and at the Neues Allgemeines Krankenhaus in Hamburg there are separate pavilions for therapeutic gymnastics. At the latter a new pavilion for this purpose is now in process of construction and will be fitted up about April, 1900, costing about $30,000. This is a method of therapeutics which in America and England is much neglected. It is possible that the close connection between the Laborer's Insurance Bureau, referred to before, and the hospital has made this treatment necessary. The Imperial Government is bound to take care of the laborer until he is ready and fit for work again, therefore, the broken bone, for example, must not only be united but the muscles, tendons and joints must be in working order before the patient is discharged cured.

The construction of the gymnasium in use now is of a rather primitive kind. The fittings are those which may be found in all the club, college and Y. M. C. A. "gyms" in the United States, and a lot of special machines designed by the Swedish and German orthopedists.

Each machine is adapted to special purposes and can also be made to measure the progress of the cure. Each is adapted to active and to passive motion. The hand, for example, which has been stiffened by injury or infection, is strapped into the machine. The arm is immovable. The pendulum of the machine is made to swing a few degrees, as far as the patient can stand without much pain. This is recorded. For twenty minutes, or other interval, the regular motion of the pendulum is kept up. Then a little advance is made or the patient is required to use another machine or use the same machine in another manner. For office use there is a so-called universal machine. The separate machines are evidently better, as being simpler and adapted to the use of many patients at the same time. The use of these instruments is very satisfactory to the patients. The rhythmic motion of the pendulum, and the gradual manner in which the breaking up of the adhesions and the restoration of circulation and nutrition in the part is accomplished and the recognition of the progress of the repair secures the co-operation of the patient.

At the Eppendorf Hospital I saw some, to me, novel machines. One was a bottomless hopper in the middle of a box of moist sand. The hopper was about as high as a wagon-box. This is used to secure and demonstrate the ability to shovel. Another peculiar "machine" was a flight of steps and a row of sandbags of graduated weight, from fifty to two hundred pounds. These were used to prepare the patient for labor of that kind.

I was told by the editor of a labor paper that the laboring classes are turning against the regularly educated medical profession everywhere in Germany, and resorting to the water and massage methods of treatment. This man was himself educated in medicine, and yet he was not able to explain the phenomenon. One of the books that seems to be most popular and influential, published by a Dr. F. E. Belz, was shown me. It contains 1900 pages, poorly and cheaply illustrated, and is sold at 10 marks—$2.50. It advertises a sort of sanitarium at Radelbeul near Dresden. The book itself resembled any one of a dozen so-called "Family Medical Advisers," which flood our own country. In my subsequent bicycle tours throughout Germany and Austria the popularity of this so-called *naturhiel kunde* has been impressed on me. I often stopped in small villages over night and became acquainted with many people. It seems to be a strong movement, and perhaps began with Father Kneip.

BAYARD HOLMES, M.D.

PROPOSED UNIVERSITY OF LONDON.—The proposed University of London, which will have a large medical, and probably also post-graduate school, has at last secured a home in the fine buildings of the Imperial Institute. The Institute lies just north of the famous Natural History Museum at South Kensington, and is in much the same style and an even larger building. This not only provides an appropriate nucleus for a great school, but is also easy of access from all parts of London, and near to the art, architectural and science museums and schools which have made Kensington a household word.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Medical Sciences, August.

1.—*Relation of Idiopathic Dilatation of Colon to Phantom Tumor, and the Appropriate Treatment of Suitable Cases of these Affections by Resection of Sigmoid Flexure. Reginald H. Fitz.
2.—*Cases of Typhoid Cholecystitis Ending in Recovery. J. M. DaCosta.
3.—*Influence of Various Diets on Elimination of Urinary Nitrogen, Urea, Uric Acid, and Purin Bases. Alonzo Engelbert Taylor.
4.—*Pyocyaneus Baciliaemia. N. E. Brill and E. Libman.
5.— Case of Primary Hemorrhagic Effusions into Pleuræ and Peritoneum. William S. Cheesman and William S. Ely.
6.—*Gastric Ulcer at Massachusetts General Hospital, 1888-1898. Robert B. Greenough and Elliott P. Joslin.
7.— Case of Two Distinct Fractures Occuring in the Same Patella at an Interval of Eight Months. John Norman Henry.
8.— Bronchial Obstructions by Suppurating Bronchial Glands. J. N. Hall.
9.— Critical Summary of Recent Literature on Concussion of Spinal Cord with Some Original Observations. William G. Spiller.

Alienist and Neurologist (St. Louis, Mo.), July.

10.— Outline of Psychiatry in Clinical Lectures. C. Wernicke.
11.—*Varying Type of General Paresis and Ataxia. C. H. Hughes.
12.—*Legal Disabilities of Natural Children Justified Biologically and Historically. E. C. Spitzka.
13.— Relations Between Neuralgia and Transitory Psychoses. v. Krafft-Ebing.
14.— Research in Comparative Cytology on Nervous System of Vertebrates. Giuseppe Levi.
15.— Brain Bankruptcy of Business Men. C. H. Hughes.

Quarterly Journal of Inebriety (Hartford, Conn.), July.

16.—*The Pauper Inebriate: His Legal Status: Care and Control. L. D. Mason.
17.—*Prevalence of Alcoholism and its Influence on Mortality. Geo. W. Webster.
18.— Inebriety: Its Nature and Treatment. T. N. Kelynack.
19.—*Pathology of Alcoholism. J. W. Grosvenor.
20.— Work of the London Temperance Hospital. J. J. Ridge.
21.— Report of Seventh International Congress on Abuse of Alcohol. Chas. H. Shepard.

Pennsylvania Medical Journal (Pittsburg), July.

22.— Address on Laryngology. D. B. Kyle.
23.—*Pott's Disease and Its Modern Treatment. Stewart L. McCurdy.
24.—*Report of Case of Cerebellar Abscess. J. B. Crombie.
25.—*Treatment of Appendicitis. R. H. Gibbons.
26.—*Stricture of Rectum. William M. Beach.
27.—*To Make Clean the Hands and the Field of Surgical Operation with a Job. W. S. Forbes.
28.—*Some Atypical Features of Certain of the More Common Nervous Diseases. Theodore Diller.
29.—*Importance of Early and Proper Attention to Slight Ailments of the Eye. G. W. Allyn.
30.—*Normal Movements of the Ocular Muscles. Joseph E. Willetts.
31.— Attitude of the Family Physician to his Patients in Respect to Opticians. Lous J. Lautenbach.

Archives of Pediatrics (N. Y.), August.

32.—*Methods of Instruction in Pediatrics. W. P. Northrup.
33.—*Pulmonary Hemorrhage Following Exploratory Puncture of the Chest for Fluid in Infants. Henry Koplik.
34.— Transposition of Viscera with Cardiac Malformations. J. P. Crozer Griffith.
35.—*Separation of Bacteria from Milk by Natural Process. Rowland G. Freeman.
36.— Case of Congenital Diaphragmatic Hernia. Samuel W. Kelley.
37.— Acute Tonsillitis in an Infant of Five Months: a Second Attack, Eleven Months Later. T. G. Brownson.

Illinois Medical Journal (Springfield), July.

38.—*President's Address: Currents and Counter-Currents in Medicine. T. J. Pitner.
39.— Stomatitis Materna. Jacob Schneck.
40.—*A Newer Pathology of Epilepsy. Daniel R. Brower.
41.— Journalizing the Transactions. George N. Kreider.
42.— Vesicular Degeneration of the Chorion. Carl E. Black.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), July.

43.—*Physician, Priest and Patient. Rev. Edward J. Gleeson.
44.—*Contagious Cutaneous Diseases. Albert E. Carrier.
45.—*Some Excerpts and Deductions from Records of Gynecologic Cases. James N. Martin.
46.— Technique of Alexander's Operation. Eugene Boise.
47.—*Gall-stone Surgery. Hal C. Wyman.
48.—*Operation of Shortening the Round Ligaments for Cure of Retrodisplacement and Prolapse of Uterus. Howard W. Longyear.
49.— Some Eminent Physicians of Ancient Times. Collins H. Johnston.
50.—*Sutural Closing of Visceral Wounds. Frank B. Walker.
51.—*Employment of Gloves as a Recent Factor in Operative Surgery. Schuyler Colfax Graves.
52.— Diseases of the Cavities of the Nose an Important Factor in Producing Affections of the Eye. Albert E. Bulson.

Richmond (Va.) Journal of Practice, July.

53.—*Surgical Complications of Typhoid Fever. Hugh M. Taylor.
54.—*Ectopic Pregnancy. John W. Long.
55.— Two Cases Illustrating Necessity of Exploratory Incision. Stuart McGuire.

Medical Bulletin (Phila.), August.

56.— Primary Syphilis. John V. Shoemaker.
57.—*Notes From a Skin Clinic. E. S. Gans.

American Journal of Surgery and Gynecology (St. Louis, Mo.), July.

58.— Pathology and Therapy of Cancer, with Special Reference to Cancer of the Stomach. Augustus C. Bernays.
59.—*The New Treatment of Tetanus. Emory Lanphear.
60.— Case of Senile Hypertrophied Prostate with Marked Urinary Obstruction; Bottini Operation; Relief. Later, Herniotomy, Sepsis and Erysipelas; Death; Pathological Specimens Showing Effect of the Bottini Operation. Bransford Lewis.
61.—*Radical Treatment of Congenital Hernia. James F. Roach.
62.—*Report of Four Cases of Sarcoma Treated by Injection of Erysipelas and Prodigiosus Toxins. C. M. Nicholson.
63.—*Treatment of Endometritis. John C. Murphy.
64.—*Correction of Normal Divergence and Divergence by Position of the X-Rays. Heber Robarts.
65.— A Visit to St. Bartholomew's Hospital, London, Eng. O. Beverly Campbell.
66.— Report of Case of Orchidopexy Complicated by Hernia, with Presentation of Patient. C. M. Nicholson.

Modern Medicine (Battle Creek, Mich.), July.

67.— Classification of Hydriatic Effects Used in Treatment of Disease. J. H. Kellogg.
68.—*Report of Case of Neurasthenia in which the Exercise Cure was Indicated. W. B. Holden.
69.— Glycosuria and Albuminuria in their Functional Stages. David Paulson.

Canadian Practitioner and Review (Toronto), August.

70.—*Preliminary Communication on the Spread of Tuberculosis. Wm. Goldie.
71.— Notes on Treatment of Eczema. Graham Chambers.
72.—*Etiology and Diagnosis of Cerebrospinal Fever. William Osler.

Kansas City Medical Index-Lancet, August.

73.— Some of the Uses of Plaster of Paris in Surgery. N. A. Drake.
74.— Etiology of Tuberculosis from Standpoint of Biology. Jos. Clements.
75.— Scarlatina. Tinsley Brown.
76.— Diarrhea in Children. C. N. Petty.
77.— Abnormal Conditions in Labor. J. A. Sigler.
78.— Review of Recent Advances in our Knowledge of the Anatomy and Physiology of the Nervous System. John Punton.

Dominion Medical Monthly (Toronto), July.

79.— Fractures. E. B. Smith.
80.— Surgical Treatment of the Insane in Private Practice. Ernest Hall.

Louisville Monthly Journal of Medicine and Surgery, August.

81.—*Charlatanism. Ap Morgan Vance.
82.— Detachment of Retina. Dudley S. Reynolds.
83.— Malarial Hemoglobinuria; More About It. Wm. Britt Burns.
84.— Clinical Lecture. J. M. and S. W. Holloway.
85.— Fractured Base, with Deafness, Timitus, Vertigo, Exophthalmus, Facial Paralysis, Mastoiditis; Operation and Recovery. J. A. Stucky.

Medical Register (Richmond, Va.), July.

86.— Evolution of Therapy. Simon Baruch.
87.—*Ectopic Pregnancy. J. W. Long.

Clinical Review (Chicago), August.

88.— Rectal Diseases in their Relation to Life Expectancy. Weller Van Hook.
89.—*Clinical Lecture on Diseases of the Heart, Lungs and Pleura. Joseph M. Patton.
90.— Various Sources of Infection. Oscar J. Price.
91.— Epilepsy; Locomotor Ataxia; Beri-Beri; Two Cases of Hemiplegia. Elbert Wing.
92.— Sciatica. Henry M. Lyman.
93.— Clinical Lecture on Obstetrics and Gynecology. Hemorrhage during Labor. Denslow Lewis.

Indiana Medical Journal (Indianapolis), August.

94.— Medical Dietetics. W. J. Fairfield.
95.—*Diagnosis of Cancer of Stomach by Chemical Investigation. Alois B. Graham.

Medical Summary (Toledo, Ohio), August.

96.— Cholera Infantum; Its Pathology and Treatment. D. H. Keller.
97.— Difference Between Cow's Milk and Woman's Milk. Joseph Adolphus.
98.— Clinical Notes on Euquinin. W. R. D. Blackwood.
99.— Examining Boards Illegal. J. W. Lockhart.
100.— The Nervous System. Richards Gray.
101.— Tetanus. Frank R. Brunner.
102.— Case for Diagnosis. Geo. J. Monroe.
103.— Treatment of Erysipelas. Milton P. Creel.

Canada Lancet (Toronto), June.

104.—*Early Diagnosis of Pulmonary Tuberculosis with Treatment. Gilbert Gordon.
105.— Vaginal Celiotomy, with Report of Cases. A. Lapthorn Smith.

Medical Age (Detroit, Mich.), August 10.

106.—*Nephritis without Albuminuria. Charles Goodwin Jennings.
107.— Catgut in Abdominal Surgery. E. Copeland.
108.— Moral Therapeutics. Rev. J. J. Purcell.

American Practitioner and News (Louisville, Ky.), July 1.

109.— Utility of Blood Clot in Treatment of Wounds. R. C. McChord.
110.—*Prevalence of Ametropia and Heterophoria, with Remarks on Eyestrain. A. G. Blincoe.
111.— One Hundred and Thirty-two Gall-Stones Removed without Operation. Edward Speidel.

Northwestern Lancet (St. Paul, Minn.), August 1.

112.—*Physiologic and Medical Treatment of Insomnia. John V. Shoemaker.
113.— Retroversion of Uterus. Franklin H. Martin.
114.—*A Few Hints on Treatment of Urethritis. George R. Patton.

Pediatrics (N. Y.), August 1.

115.—*Malaria in Children. Dr. Moncorvo.
116.— Enlargement of the Tibial Tubercles. Henry Ling Taylor.
117.—*Night Terrors in Children. Julius Morgenstern.
118.— Atypical Case of Measles. Frank H. Rowe.

Virginia Medical Semi-Monthly (Richmond), July 7.

119.— Physiologic and Therapeutic Effects of Static Electricity. G. P. Edwards.
120.—*Peculiarities in Heart Affections in Children. Philip F. Barbour.
121.— Diagnosis. C. F. Ulrich.
122.—*The Perineum; Its Injury and Repair. Edmond T. Baker.
123.—*Permanganate of Potassium Injections in Treatment of Diarrhea and Dysentery, together with Internal Antiseptics. Lucein Lofton.
124.— Prevention of Infection During and After Labor. W. H. Taylor.
125.— Laminectomy; Plea for its Employment in Serious Spinal Injuries. Hugh G. Nicholson.
126.—*Ophthalmic Clinical Contributions. David Webster.
127.—*Mental Element in Treatment of Headache. Philip Zenner.

Medical News (N. Y.), August 19.

128.—*Bacillus Icteroides as the Cause of Yellow Fever—A Reply to Professor Sanarelli. George M. Sternberg.
129.—*Some Fallacies in the Modern Treatment of the Nose and Throat Diseases. Dunbar Roy.
130.— Importance of a Knowledge of the Phylogenetic Development of the Child in Prevention of Children's Diseases. E. Stuver.

Cincinnati Lancet-Clinic, August 19.

131.—*Calomel. C. J. Funck.
132.—*A Few of the Clinical Uses of Liquid Air. C. T. Pearce.

Boston Medical and Surgical Journal, August 17.

133.—*Address in Surgery. Alexander Ogston.
134.—*Value of Pulse in Diagnosis and Prognosis. Henry Jackson.
135.— Philosophy of Sickness. Thomas F. Harrington.
136.—*Improvements in Army Medical Service, Suggested by Experience in the Late War. William H. Devine.
137.— Unusual Diastolic Murmur, with Autopsy. R. Edes and R. Pearce.

New York Medical Journal, August 19.

138.—*Localized Tuberculosis of the Intestine, with a Report of Seven Operated Cases. W. J. Mayo.
139.—*How Far is Retroversion of the Uterus Responsible for Some of the Functional Neuroses? Miriam Gardner.
140.—*Report of Four Cases of Epidemic Cerebrospinal Meningitis, with Special Reference to the Value of Lumbar Puncture as a Means of Diagnosis. José L. Hirsh.
141.—*Abdominal Injuries due to Blunt Force. Report of Two Cases. Russell S. Fowler.
142.— Hodgkin's Disease. With Report of Cases. E. G. Wood.
143.—*Ophthalmic Clinical Contributions. David Webster.
144.— Case of Acute Alcohol Poisoning in a Child. Maurice A. Walker.

Medical Record (N.Y.), August 19.

145.—*A Type of Tropical Fever. L. L. von Wedekind.
146.—*On the Rôle of Primary and Secondary Osteoplastic Surgery in the Treatment of Complicated or Compound Fractures of the Extremities. Thomas H. Manley.
147.—*Angioneurotic Edema: with a Report of Four Cases. Herman B. Baruch.
148.—*Use of Quinin in Malarial Hemoglobinuria. S. L. J. Steggall.
149.—*Concealed Menstruation. A. Brothers.
150.—*Cutaneous Electrolysis. Fred. J. Leviseur.
151.—*Facial Eruptions due to Intranasal Disease. Carl Seiler.
152.— Personal Observation on an Unusual Case of Labor. P. T. O'Connor.

Medical Review (St. Louis, Mo.), August 19.

153.— Successful Treatment of Chronic Constipation. W. H. H. King.

Maryland Medical Journal (Baltimore), August 19.

154.—*Surgical Complications of Typhoid Fever. Hugh M. Taylor.

Philadelphia Medical Journal, August 19.

155.— Relation of Local Meteorologic Conditions to the Influenza-epidemic in Philadelphia, Winter of 1898-99. Howard S. Anders.
156.—*Conservative Gynecology. S. C. Gordon.
157.—*Report of Case of Complete Monocular Blindness Following an Injury to the Head, Attended by Full Restoration of Vision. William Campbell Posey.
158.—*Typhoid Fever with Death in One Week from Onset; Autopsy Findings. William Fitch Cheney.
159.—*Acute Diabetes. Henry L. Elsner.
160.— The Twenty-four Hours' Urine in Cystic Kidney, with Observations on an Aceto Soluble Albumin. Clifford Mitchell.

AMERICAN.

1. **Phantom Tumor.**—After discussing the literature briefly and their supposed causes and nature, Fitz shows that in recent literature reports of phantom tumors are rarely to be found, while a large number of cases have been published closely simulating this condition, in which the tumor is supposed to be permanent enlargement of the colon. The object of his paper is mainly to show that an increase of the size of the colon occurs at times without any organic or mechanical cause other than fecal accumulation, and that this may be sufficient to produce discomfort, deformity, and even death. These idiopathic dilatations of the colon have been described in a recent article by Treves, who thinks that they are due to actual mechanical obstructions in the terminal part of the bowels. Nevertheless, some recent examinations have not found such stricture, and Fitz thinks it would be more in accordance with the facts to recognize two types, one due to a defective development producing its disturbances from birth, and the other presumably those in which defective expulsive power is the prime factor. Those that have been observed in adults are connected with the same general conditions as in this last variety of infantile dilatation. Fitz reports a case which seems to him to support his view that chronic phantom tumor is rather due to dilatation by gas or feces, and in which relief was only obtained by laparotomy and excision of the dilated sigmoid flexure. In this operation he followed the example of Treves, who had similarly relieved a patient from the effect of congenital malformation of the lower bowel.

2. **Typhoid Cholecystitis.**—Da Costa notices the seriousness of the complication of inflammation of the gall-bladder in typhoid and thinks that recovery may occur more frequently than has been generally supposed to be the case, our conclusions having been derived only from the severer cases. He reports three cases in which recovery occurred, two in soldiers and one in a child 8 years old, in whom the symptoms were quite severe. He had never seen the pain so marked as in this last case, and vomiting was incessant and jaundice pronounced. He was just on the point of calling in a colleague to perform an operation when improvement began and the child recovered. The treatment in the cases given consisted for the most part in the administration of fractional doses of calomel frequently repeated to combat the nausea, and the local use of ice and poultices. Counter-irritation with turpentin stupes and iodin may be used. Morphin hypodermically may be necessary for the pain, and, as in his recent case, the circulation may have to be supported by hypodermics of strychnin and digitalis.

3. **Influence of Diet on Urinary Inflammation.**—The experiments of Taylor were performed on himself, and eight separate diets were tried, each a period of six successive days: 1. A mixed normal diet with the avoidance of sweet-breads, liver and brains. 2. Diet of sweet-breads, no other animal proteids being taken, but bread and non-proteid vegetables as usual. In this there was considerable systemic disturbance, diarrhea, etc., subsiding, however, toward the close of the period. 3. A heavily proteid diet. 4. Purely vegetable diet without milk or eggs or any animals fats in cooking. He incidentally remarks that it is these latter that are the salvation of so-called vegetarians; without them the diet is bulky and revolting. Naturally a large amount of proteids in vegetable form will be required. 5. A milk diet. 6. A nitrogenous free diet, consisting of sago, sugar and butter. In this there was loss of weight, constipation and distinct loss of strength. After a long period of rest, Diet 7 was tried, a normal one with the addition of three cups of coffee and two bottles of beer, and 8, the same with a little more coffee and no alcoholics. In all experiments except the sixth, the total urinary elimination of nitrogen corresponded with the intake. This nitrogen represented the common proteid metabolism of the body, and had no constant relation with the nucleinic metabolism, which is a lower specialized process, causing a small output of uric acid and purin bases. The common nitrogenous metabolism is a process of high specialization and produces a larger output of nitrogen in the form of urea and ammonia. Keeping these distinctions in mind, and that they may be decreased or increased independently, the worthlessness of the ratios based on the comparison of their results, like the urea-uric acid ratio is obvious. The urea, during the first experiment, averaged 90.8 per cent.; it fell to 82.3 per cent. on the abnormal sweet-bread diet; on the heavily proteid diet it was 90.1 per cent.; on the vegetable, 92 per cent.; 94.3 on the milk diet; 82.4 on the carbonous diet, and on the two last diets it was respectively 89.6 and 91.3 per cent. The average of the physiologic diets was therefore 91.3 per cent. of the total nitrogen, which is about 5 per cent. above the ordinary figures. He attributes this, however, to an individual peculiarity. The uric acid was lowest on the milk diet, 0.284 g. per diem; very little less on the carbonous diet, 0.273; on the normal, 0.364, on the heavily proteid diet, 0.456, and on the purely vegetable

diet, 0.462 g. The average, for the three days without the diarrhea, of the sweet-bread diet, 1.260 g., he thinks, represents the output most accurately, the excess being due to the large amount of nucleins in sweet-breads. When coffee and beer were added to the normal diet the uric acid rose to 0.721 g., just double the amount without these. He attributes this mostly to the coffee. The failure of the heavy meat diet to increase the uric acid is contrary to the English theories, but muscular tissue is not rich in nucleins, and it is only from nucleins and purin compounds that uric acid is derived dietetically. The large amount in vegetable diet is a heretical performance, but easily accounted for by the peas and beans which must form so large a part of a vegetable diet. The average of purin bases eliminated in the normal diet (Experiment 1) was 0.0249. During the sweet-bread diet there was but little change. Apparently all the nucleins in this diet passed into uric acid. In the heavily proteid diet there was a slight reduction; in the vegetable diet a still greater one. The first decided change was seen in the milk diet, 0.0112 g., and on the carbonous diet of the next period (6), the bases fell to 0.0066 g. As soon as coffee and beer were added, as in 7, they rose to 0.0544 g. a day, and in Experiment 8, without beer, even a little higher. Obviously caffein has been eliminated as a purin base. These figures confirm Krueger and Salomon's findings, who in a study of the purin bases obtained from the human urine found that less than one-third came from metabolism, while the other two-thirds belonged to the homologous series and were derived from xanthins ingested with the diet. Taylor's notes on the ratios between the uric acid and the bases are interesting, but not specially valuable. The ratios of the total nitrogen to the purin nitrogen are subject to about the same considerations as those of the urea uric acid ratio. They depend on distinct sets of conditions. He wishes to emphasize the distinctions between the common nitrogenous and the nucleinic metabolisms by these facts. The experiments are to be considered physiologic, and have no special bearing on the physiology of gout in his opinion.

4. **Pyocyaneus Bacillaemia.**—Brill and Libman report a case of septicemia confirmed by blood culture in which the staphylococcus invasion was followed during life by a pyocaneus invasion, also determined by the blood. They review the cases in literature and find that this is the second on record in which the pyocyaneus bacillus was found in the blood during life in such a way as to exclude all doubt, and the first case in which it was found in an adult.

6. **Gastric Ulcer.**—The statistics of gastric ulcer in the Massachusetts General Hospital are carefully analyzed by Greenough and Joslin, with the following general conclusions based on the study of 187 cases of gastric ulcer occurring in the Massachusetts General Hospital, 1888-1889. 1. Gastric ulcer is more frequent in Boston than in Chicago, Baltimore, Denver or San Francisco. 2. It is five times as common in women as in men. 3. The average age in men is 37 years; in women 27. 4. Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the male patients, but only 1.27 per cent. of the females. No woman under 30 died of hemorrhage of gastric ulcer during this period. 5. The blood was that of a cholorotic type of anemia. 6. Perforation occurred in 3.2 per cent. of the cases, and none of these patients left the hospital alive. 7. Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time—due to gastric disease—was 20 per cent. Among the males it was 30 per cent., with the females 9 per cent. 8. The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes. 9. The mortality of 8 per cent., and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients indicates the need of surgical intervention in other than emergency cases of this disease.

11. **The Varying Type of Paresis and Ataxia.**—In an article last year, Mendel called attention to the changes in the characteristic features of paresis as distinguished from the classic descriptions of early writers and those generally observed two or three decades ago. He notices a marked increase in the demented type, a greater frequency of remissions and an apparent arrest of symptoms, its greater frequency in the female sex and its appearance in the young. Nowadays, he says, we make a diagnosis by the pupilary immobility, altered knee signs, analgesia of the legs, changes in disposition, speech and writing. Hughes says that these changes in the type of paresis are beyond question, and asks how we are to account for them. He believes that it is by the precocity and more general diffusion among all classes of people of business ambitions and schemes, excess and overstrain, the spread of intemperance and the constantly increasing rush of modern life.

12. **Legal Disabilities of Natural Children.**—Spitzka, in a curious article with a large number of interesting historic notes, maintains that the legal disabilities of bastards are actually justified, notwithstanding their apparent hardships, by social and historic conditions. His article gives a large number of instances where illegitimacy has been an evil to mankind as well as to the unfortunates themselves.

16. **The Pauper Inebriate.**—Certain statistics of inebriety and crime are discussed by Dr. Mason, and after general consideration of the social and legal status of the habitual drunkard he takes up the special points as to the care and treatment of inebriates: 1. Pauper inebriates, he holds, should be recognized as the wards of the state, and their care and maintenance should be provided for. 2. They should be isolated as a distinct class as the insane and criminal are isolated. Neither the asylum nor the prison is the proper place for them. They should be sequestrated by law for a long term, at least two or three years, and the directors of the institution should have the privilege of giving tickets of leave or parole, as in the insane asylums. The asylum or place of restraint should be a strictly remedial and reformatory institution, with large tracts of land and means for educating the inmates in various manual trades and occupations. The clerk or bookkeeper who has become an inebriate will find, as a rule, serious difficulty in regaining work, but if he has learned a trade comparatively few questions will be asked. The inmates should be graded and classed. Dr. Mason thinks that well-established state institutions for the care of such inebriates would greatly decrease the number of insane annually treated in the state institutions.

17.—See abstract in JOURNAL, June 10, p. 1322.

19. **Pathology of Alcoholism.**—Grosvenor, after discussing in detail the known facts in regard to alcohol and its effects on the body, concludes as follows: Scarcely any disease, perhaps none, exerts so extensive a pathologic influence as alcoholism on the organs, tissues and fluids of the body. The paralyzing effects of alcoholism extend throughout the nervous system from its periphery. This paralytic effect is seen not only in the body but in the intellect and moral sense. The principal degenerations in alcoholism are fatty, fibroid and atrophic. Fat is substituted for normal tissues; alcohol withdraws water from the tissues, and thus they become dry and hardened, and at length assume a fibroid character; through lack of proper nutrition the cells become shrunken and atrophied. By these degenerations the anatomic integrity of the organs is destroyed, partially or wholly, and their functional activity is impaired. Thus the whole system suffers and in time becomes a wreck. Alcohol has been aptly termed "the genius of degeneration." So profound and widely disastrous are the pathologic results of alcoholism on the individual and the race, and believing the disease may be placed properly in the list of preventable diseases, it is his firm conviction that it is the bounden duty of the medical profession, sanitarians, and the boards of health to use their utmost efforts for its complete eradication.

23. **Pott's Disease and Its Modern Treatment.**—After presenting the various methods of the treatment of Pott's disease, McCurdy outlines the following rules:

1. For the mechanical support of Pott's disease below the seventh dorsal vertebræ, the plaster-of-paris jacket of Sayre is the best support now known.

2. It should be worn day and night, from the earliest incipiency, until all active symptoms have subsided and convalescence is well advanced.

3. During convalescence the Taylor brace is to be preferred.

4. For cervical diseases, the brace shown makes ample support.

5. For upper dorsal disease the plaster-of-paris jacket, with anterior chin shelf, is to be preferred.

6. Finally, when cases are placed upon proper treatment

early, and such treatment is continued throughout the entire course of molecular disintegration, absorption and reproduction, cases should recover without deformity, in all variety of disease, except in upper seventh dorsal vertebra, and in this region with a minimum of deformity.

24. **Cerebellar Abscess.**—Crombie reports a case in a girl aged 11 years, who had acute inflammation of the middle ear with symptoms indicating brain trouble. As long as she lay on her right side she felt no pain nor distress and had a good appetite, but turning on her back or left side, or sitting up caused intense dizziness and vomiting. Her temperature was normal, pulse 78, pupilary reactions correct, visual field normal and no ocular paresis. There was slight edema about the right eye and the urine was strongly albuminous. Later the edema became more marked about the eye and the right side of the face, so that the eye could not be widely opened on account of it, and was thought to be more protruded than the left. She finally died of respiratory failure after having had several convulsions, apparently hysteric. The post-mortem showed edema of the scalp, an excess of fluid in the cerebral cavity, an abscess containing about one-half ounce of greenish pus in the anterior part of the base of the cerebellum, terminating at the point of adhesion of the temporal bone. On the inner side of this abscess, communicating with it, was another about half as large. In the posterior inferior lobe was a third abscess the size of a walnut and a fourth and smaller abscess lay mesial to the third. These latter did not communicate with each other nor with the first. Remarking on the diagnosis, the Doctor remarks that if they had ventured to operate they would have opened the mastoid and found it healthy. They might have punctured the sinus with a like result, and explored the attic and tympanum without finding lesions, and then operated on the cerebellum at the usual site to evacuate one abscess and leave three.

25. **Treatment of Appendicitis.**—Gibbon's paper is a strong plea for operative treatment of appendicitis. As regards the operation, he prefers Dr. McBurney's incision as being surgical as well as anatomic in every sense.

26. **Stricture of Rectum.**—The newer methods, according to Beach, have made the rectum no longer an unknown region. Its stricture requires early recognition and the normal anatomy must be understood, but more especially the rectal valves demonstrated by Dr. Martin of Cleveland. Many so-called strictures of the rectum are hypertrophied valves and can be treated in a radical manner. He believes that the use of the proctoscope for complete inspection of the rectum should become the routine practice as it is most important in the diagnosis and location of stricture of the abdominal rectum. The rectal valve must be considered in the pathology of semilunar, annular and tubular strictures, and obstipation is the result of semilunar stricture, and can be cured by valvotomy.

27. **Cleaning the Hands.**—Forbes recommends a contrivance which he called a Job, consisting of three ounces of curled horse hair rolled up into a flat oval mass. He claims that this thoroughly cleanses the skin by rubbing, and is easily cleansed with boiling water before and after each surgical operation. Kept in alcohol, it is ready for use in the hospital or elsewhere. He called it a Job for, like Job of old, having passed through all the tests, its vitality and integrity remain unimpaired.

28. **Atypical Features in Common Nervous Diseases.**—Diller briefly calls attention to two or three leading symptoms of apoplexy, tabes and paresis. In the former disease, cases unattended by hemiplegia are not so rare, and the text-books that seem to imply that this symptom is constant present an incomplete picture of the disease. Sudden unconsciousness in persons over 50 years of age, with flushed countenances, is probably due to apoplexy and should be looked into. Probably many of the slighter apoplectic attacks are mistaken for fainting spells, and the reasonable prophylactic measures are neglected. The symptom of staggering, so characteristic of tabes, is really much less conspicuous or absent in many cases. Diller believes that failure to recognize tabes is more often due to the absence of ataxia than to any other one symptom, and it would be a safe rule to take tabes into consideration in any patient complaining of pains in the legs, arms and epigastric region in which the cause is not apparent, and the Argyll-Robertson pupil and epigastric pains in combination are very characteristic of this disease. Staggering has frequently led to the diagnosis of tabes where it did not exist. Delusions of grandeur suggest paralytic dementia, but it is a great mistake to depend on this symptom. They are probably absent in the majority of cases at certain stages of the disease, and are less common now than in years gone by.

29. **Slight Ailments of the Eye.**—The chief point of Allyn's article is the fact that the eye is never out of danger until perfectly well. The slightest injury is not a trifling matter.

30. **Normal Movement of Eye Muscles.**—The object of Willett's paper is to advocate the necessity of correcting not only the errors of refraction but all lack of ocular muscular balance in neurasthenic individuals. Individual cases are not to be judged by the appearance of the deviation, as a thorough diagnosis can not be reached until we determine which of the many complex functions of the neuromuscular apparatus is deranged. It is an important fact that while the defective actions of other organs are readily apparent, often the ocular defects are not, the patients themselves having no knowledge of their existence. The constant unconscious excitation of the muscle nuclei to overcome this masked, untreated defect, affords a leak or consumes the necessarily small amount of nerve force generated, and the treatment instituted is generally deflected unless these errors are corrected.

32. **Instruction in Pediatrics.**—After noticing the importance of pediatrics as a study for medical students, Northrup maintains that didactic lecturing is important and can not be superseded. Clinical instruction necessarily requires no argument as to its value. He advises section teaching by competent assistants in special departments or wards of children's hospitals, and as apparatus he believes in the use of the stereopticon. In conclusion he speaks of another requisite, that of recitation.

33. **Pulmonary Hemorrhage Following Chest Puncture.**—Koplik considers that the introduction of the exploring needle should not be considered as an entirely harmless procedure, though he has in the past so considered it. It should not be done unless physical signs warrant its use, and he reports several cases in which puncture was made and no fluid found. Where the needle enters directly into the substance of the lung, and causes a wound of a blood-vessel, hemorrhage results, and while in a child the puncture is not sufficient to overwhelm the air-passages, it is a sufficiently alarming symptom. He never punctures more than once at a sitting, after making certain of the exact place where fluid is likely to be found. It should be made with caution on the left side, either behind or in front, in the vicinity of the heart and great vessels.

35. **Separation of Bacilli from Milk.**—Freeman finds that with the rising of cream in milk, 99 per cent. of the bacilli are found in the cream, and sterilization of the cream, removed from the milk, the same being afterward restored, makes a comparatively germ-free milk.

38. See abstract in JOURNAL, May 27, p. 1172.

40. Ibid.

43. **Physician, Priest and Patient.**—This article gives the views of a Roman Catholic priest on ethical questions of medicine and the relations of the physician to the clergy. The physician can aid the priest by performing baptism in emergencies or giving notification of danger so that the priest may be called in, etc. He also dwells on the iniquity of abortion and means to prevent conception.

44. **Contagious Skin Diseases.**—Carrier notes some of the more common skin diseases that may be due to contagion, not merely those caused by hypogenous germs, such as trichophyton, microsporon, and achorion, and the animal parasites, but also various pustular affections such as syphilis, eczema, sycosis, acne, impetigo, etc. As regards eczema, it has not generally been considered contagious, but Unna's theory of a germ infection has been adopted by many dermatologists, especially for the seborrheic forms, and the author favors this idea and accepts it to the full extent claimed by Unna. Acne has been claimed by late investigators to be caused by a germ, but he holds this still unproved. He says in conclusion: 1. There are many known contagious skin diseases in which a proper prophylaxis is not exercised to prevent invasion of healthy persons. 2. There are many diseases of the skin that from their mode of onset and behavior are so similar to known contagious

affections, that the same means should be used to prevent their spread. 3. Pustular lesions, no matter in what disease they occur, must be regarded not only as autoinoculable, but as capable of developing similar lesions when transferred to healthy individuals.

45. **Some Gynecologic Deductions.**—Martin's paper consists of certain practical deductions from his experience in gynecologic work. He adds his testimony in favor of the use of warm saline solution after or during operation, when shock is feared, both by injection into the veins and tissues, and also by enema. A quart of this solution left within the abdomen has a very valuable effect in reviving the patient and stimulating the kidneys. He has had but 1 per cent. of postoperative hernias after abdominal operations, and he attributes this to the precautions taken the first month after operation, and the advice given patients. Patients are not allowed to sit up for three or four weeks, and the adhesive strips and outer bandages are worn for two weeks longer, and after that the patient is not allowed to do any heavy lifting, jumping, etc., for a year or more, and must wear a well-fitting abdominal supporter. He thinks that many retrodisplacements of the uterus are due to allowing the patient to lie on the back too much after labor, and suggests advice as to changing position in these cases. Another cause of trouble is the lack of care after abortion, which should be as great as after labor at term. Still another cause of uterine disease is the lack of aseptic precaution in the use of aseptic uterine stems. He notes the special connection between neglected perineal laceration and irritable bladder, and insists on the importance of early perineorrhaphies. Other subjects noted in this article are: malignant disease of the ovaries, which is more frequent than was formerly held to be the case, and the necessity of operation; uterine fibroids, and cancer, the latter of which he attributes largely to cervical laceration and erosion; and deficient menstruation occurring in apparently healthy young women of sedentary habits.

47. See abstract in JOURNAL, May 6, p. 995.

48. Ibid, April 8, p. 761.

50. **Sutural Closing of Visceral Wounds.**—Walker describes the purse-string suture recommended by Dawbarn for the closure of bullet wounds of the stomach and intestines, consisting in encircling the wound with a series of continuous sutures, each of which transfixes the serous and muscular coats, but not the mucous coats, the encircled tissue being then inverted and the knot completed. This is especially adapted to wounds of not over one-half inch diameter, and preferably in thin-walled viscera. Another method is the Czerny-Lembert suture, which has no superior for the closing of large visceral wounds, the continuous suture being speedier than the interrupted, but it is advisable, to avoid distortion, to employ both. In making an anastomosis of a hollow viscus, at least four separate threads should be used. Supposing an entero-anastomosis is to be made, let four Lembert sutures be formed by four separate threads, one inserted into both portions of the gut at the mesenteric junction, a second into the wall opposite the mesentery, and the other two into the lateral wall at points equidistant from the first two. Let the knots be so tied as to leave a long and a shorter end on each thread. The quadrants thus formed may then be approximated, one after the other, by continuous sutures, using for this purpose the long ends of the thread, which are finally tied to the shorter ends respectively next adjacent. A wound of this character, thus encircled by two tiers of Lembert sutures of sterile catgut introduced by small smooth needles will be found to be accurately closed and, barring complications, will afford a favorable prognosis.

51. **Gloves in Surgery.**—The advantages and disadvantages of cotton and rubber gloves are discussed by Graves, who rather favors the more general use of the latter. As to the general question as to the value of gloves, he has no doubt. They have come to stay, and, as a step in surgery, rank with the use of sterilized instruments and dressings.

53.—See title 154.

54. See title 87.

57. **Skin Clinic.**—Gans considers dermatitis venenata, paresthesia and urticaria.

59. **New Treatment of Tetanus.**—After going over the literature of cases of tetanus treated with antitoxins, both in the ordinary way and by intracerebral injection, Lanphear concludes that: 1. In wounds of such character that the onset of tetanus is feared, preventive injection of tetanic antitoxin is advisable. 2. When symptoms of acute tetanus arise, hypodermatic injections of 10 c.c. or more of serum should be given every six to twelve hours. 3. As early as possible a competent surgeon should be called to trephine, under strictest antiseptic conditions, and inject 6 c.c. of concentrated serum into the brain. 4. In tetanus neonatorum appropriate doses should be given subcutaneously, and into the brain substance through the fontanelles. 5. Combined with the serum treatment should be the free use of those sedative agents which have been found of benefit prior to the introduction of serotherapy.

61. **Radical Treatment of Congenital Hernia.**—Roach insists on the importance of early treatment of congenital hernia, and advocates the Bassini operation as the most suitable for this purpose. He expresses his surprise that so many people go on through life wearing a truss with the continual possibility of a strangulation occurring, instead of permitting an operation to give them relief and comfort for the rest of their days.

62. **Sarcoma Treated by Toxins.**—Nicholson briefly reports four cases of sarcoma where the diagnosis was confirmed by skilled pathologists, and where operation was impracticable on account of the extent of the growth, in which he has used the erysipelas and prodigiosus toxins. In three of the cases the results were good. In one there was some reaction after injection, but no change in the growth.

63. **Endometritis.**—Murphy's article treats of the management of endometritis, and advocates as a general practice Munde's method of cervical dilatation, curetting and packing, with subsequent treatment with nitrate of silver or iodized phenol, and with hot vaginal douches throughout the treatment.

64. **Distortion of the Skiagraphs.**—Remarking on the occurrence of distortion by position and normal distortion of the image of the X-ray, Robarts insists on the importance of the use of Dennis' fluorometer for their correction. It consists of right-angle devices impervious to X-rays, together with wooden supports and an adjustable table, and it provides: 1, a perfect shadow when thrown on a screen or sensitive plate; 2, elimination of the distortion resulting from radiant energy known as the X-rays; 3, the normal distortion and distortion by position having been eliminated, the fluorometer provides an accurate cross-section of the body and supplies an absolutely correct right-angle at the intersection of the lines of which the foreign object will be found in the body. He adds, as a final conclusion, that without the evidence of a fluorometer having been used, clearly shown by its own shadows in the radiograph, no X-ray picture should be admitted in court.

68. **Exercise Cure in Neurasthenia.**—Holden reports a case of neurasthenia, with a possible traumatic element, treated by regulated exercise and nutrition, which resulted in a complete cure. He points out that the rest cure in such a case as this would have been decidedly bad treatment.

70. **Spread of Tuberculosis.**—Goldie has repeated some of the experiments of Flugge as to the dissemination of bacteria by coughing. Using a room where tests showed the bacillus prodigiosus was lacking, he washed his mouth with a culture and gave twelve coughs. Prepared plates were exposed in different parts of the room, at the end of five, ten and fifteen minutes for five minutes each, and all the plates showed varying numbers of colonies, thus demonstrating that a single act of coughing might so infect a room in every part that cultures could be produced from the air. In concluding his paper he calls attention to the risk of surgeons infecting wounds, especially in case they have any disorder in the mouth.

72. See abstract in JOURNAL, July 8, p. 98.

81. See abstract in JOURNAL, May 27, p. 1175.

87. See title 54.

89. **Lecture.**—Patton here considers hydrothorax, hemothorax, chylothorax and tumors of the pleura.

95. **Cancer of the Stomach.**—Graham concludes, after an analysis of the best established physiologic and chemical views in regard to the diagnosis of cancer of the stomach by chemical means, that careful investigation has brought us no pathognomonic symptoms, that we must consider carefully all the circumstances of the case in order to make a proper diagnosis, and that experience in the handling of cases has not yet been superseded by ready-made tests that make a diagnosis for us.

104. **Early Diagnosis of Pulmonary Tuberculosis.**—Gordon calls attention to the importance of early diagnosis, if possible, in pulmonary tuberculosis, and remarks on the difficulty, noting that the microscopic methods were utilized over thirty-six years ago when the elastic trabeculæ were considered diagnostic by Clarke and others. The fact that the disease is curable if taken early makes this a matter of great importance, and though early symptoms may not be of very much use, he alludes to those that may serve to some extent as guides. An inherited tendency should put the physician on his guard. Pain may often be complained of before any other sign. A slight rise of temperature, especially in the afternoon, may exist early and be very important. A cough without expectoration and any general failure of strength, or loss of weight or appetite should at once lead to a careful physical examination. Bronchophony is also one of the early signs. Hemoptysis will generally be preceded by some of these other signs, and he alludes to the use of the X-ray as promising in this regard. The general treatment seems to be resolved into the use of fresh air and the most favorable hygienic surroundings. He speaks well of the use of creosote, however, in his own practice. As regards the location of the health resort for consumptives, he gives figures from the *Practitioner* of June, 1898, which seem to show that high altitudes give the best results. He favors compulsory notification as of great importance, enabling health officers to locate cases and to disseminate information as to precautions, disinfection, etc., admitting, however, that it may produce hardships in individual cases.

106. **Nephritis Without Albuminuria.**—Jennings reports two cases of nephritis accompanied with an abundant discharge of casts, but without albuminuria, and discusses the literature of the subject. From the writings of these authorities he finds it shown: 1. That very rarely chronic parenchymatous nephritis has been observed in which albumin and casts have been absent from the urine for certain periods of time. 2. That chronic insterstitial nephritis is characterized by a urine in which albumin and casts appear in smaller quantity, and that frequently both disappear for short or long periods of time. 3. That the appearance and disappearance of casts and albumin in nephritis are synchronous—in other words, that the pathologic changes that cause albuminuria and cylindruria are identical. Simon is particularly emphatic on this point.

110. See abstract in JOURNAL, June 10, p. 1320.

112. See abstract in JOURNAL, July 8, p. 101.

114. **Urethritis.**—Patton gives his ideas as to the treatment of urethritis, which in most cases may be considered as specific. He thinks that local remedies combined with ordinary systemic tonics are most effective, and the so-called specifics have little real curative value. He remarks on the unreliability of the subjects of this disease as regards their statements or their cooperation in the treatment. A prescription which he has used largely for hospital and private practice as an injection is: Aquæ picis liquidæ, 16 oz., and zinc oxidi, q. s., triturated together in a mortar until the solution is neutral to test-paper, and then filtered. He has used before, in many cases, a solution of 4 grains of permanganate of zinc in a quart of hot water. If this does not succeed after seven days he uses the tar prescription. As regards chordee, a drink of a pint of any warm demulcent tea containing 30 grains of nitrate of potash will almost invariably prevent its occurrence. A well-fitting suspensory bandage is a very important element in the treatment, especially in the prevention of epididymitis.

115. **Malaria in Children.**—Remarking that the subject is not less important from a social than a medical point of view, since malaria not only increases mortality but produces mental and physical deterioration in the growing children, Moncorvo gives some of the results of his experience in Rio Janeiro, in a total of 5000 cases of malaria in children of various ages. He selects the 513 cases occurring during the years 1891 and 1892, and finds that it is most frequent during the first year of life. His experience in this respect does not vary greatly from that of other observers. He upholds the view that it may exist in the prenatal condition, and reports several cases in which children were born with enlarged spleens and symptoms of paludic intoxication. He also finds that in his cases the majority were boys, and more than half came from the working class quarters, where the sanitary conditions were least favorable. The greatest number of cases occurred during the first three months of the year, which, it must be remembered, is midsummer in that hemisphere. The paper is to be continued.

117. **Night Terrors.**—Morgenstein reports a case of a child who suffered greatly from night terrors, and he found that threats of the devil coming to take him away were the basis of these disturbances. The moral is that mothers should not frighten their children when they misbehave. There is generally in these cases some gastro-intestinal derangement coexistent with the attacks and tonics and aperients, with light wholesome diet, will generally suffice for medical treatment.

120. See abstract in JOURNAL, June 3, p. 1254.

122. **Repair of Perineum.**—Baker describes an operation claimed as devised by himself for repairing perineum rupture. He passes the tenaculum through the mucosa of the ruptured vaginal wall, in the median line, about 1½ to 2 inches above the posterior commissure. Then with a scalpel he makes an incision from the tenaculum downward and outward on both sides to a point where the parts are normally approximated. Next he makes an incision connecting these two points, thus describing a triangle, then denudes the enclosed space. Then, using silver sutures, he passes the first from either side of the denuded surface near the apex, bringing it out on the opposite side not too close to the margin, passing downward to the base with as many sutures as are necessary, being careful to allow a sufficient margin for a firm hold, and a flat surface for twisting the sutures. All the sutures are wholly within the vagina. The ends are left long enough to pass through a rubber tube to prevent laceration of other parts. Two or three superficial silk sutures are taken in the median line, which is the base of the triangle, the parts cleansed, dried and dressed antiseptically and bandages applied. He claims perfect success in the operation.

123. **Injections in Diarrhea and Dysentery.**—Lofton recommends the use of high injections of 1 to 6 per cent. solution of permanganate of potash in the treatment of diarrhea and dysentery. He gives these injections in the dorsal or Sims' position, with the pelvis elevated, the amount varying according to the patient's condition and the irritability of the gut. Injection is given very gently with a fountain syringe, and followed by gentle massage of the abdominal viscera over a dry heated flannel or woolen garment. Then the injection is removed and after fifteen or twenty minutes repeated with a milder solution, which the patient is instructed to retain as long as convenient. He cautions against the use of permanganate in cold water, as it will create intolerable tenesmus. The water should be as hot as can be easily borne. He reports two cases which he thinks illustrate the value of this method.

126.—See title 143.

127. **Mental Element in Treating Headache.**—Dr. Zenner's paper is one presented in the symposium on Headache, before the Section of Neurology and Medical Jurisprudence at the recent meeting of the ASSOCIATION. He points out that the great influence of the mind in the cure of disease is becoming more and more recognized in the medical profession: "That knowledge is the key to understanding how sacred shrines and relics, new 'systems,' and vaunted remedies have effected and still effect, apparently marvelous cures, and succeed in imposing to such a degree on a credulous public. We are learning in the same manner, and this is of greater consequence to us, that many of the drugs, and other therapeutic agencies applied to the treatment of disease, often act chiefly through mental impressions. This influence of the mind is not limited to any one class of diseases. It is often observed, sometimes even marked, in organic disease, especially in the amelioration of some of its manifestations. Yet its greatest display of power is naturally to be expected in functional, and above all in nervous, diseases." He reports two cases of brain tumor in detail. The other papers of the symposium will appear in an early issue of the JOURNAL.

128. **Bacillus Icteroides in Yellow Fever.**—Sternberg replies, in his article, to Sanarelli's recent communication. He calls attention to some misunderstandings which he thinks Sanarelli has shown of his own statements and gives his reasons for not admitting the specific rôle of the latter's bacillus. He considers it a pathogenic saprophyte occasionally present in the blood and tissues of yellow fever pa-

tients, but its etiologic relation has not yet been established. He is open to conviction if his views prove erroneous.

129. See abstract in JOURNAL, May 6, p. 997.

131. **Calomel.**—Funck calls attention to calomel, which he considers a veritable king and giant among remedies, unique in its own peculiar action, irreplaceable by any other as a sedative eliminative, but brought almost into disrepute, limited to the treatment of syphilis, an occasional purgative, and an empiric use as an anti-emetic in children, without any explanation in the books as to its *methodus medendi*. He thinks that the faulty application of physiologic experiments to therapeutics in this case has wrought incalculable harm in limiting and discrediting the use of calomel as a therapeutic agent.

132. **Liquid Air.**—Pearce reports observations of the use of liquid air by Dr. A. Campbell White, in Lusk's dermatologic clinic. He believes it to be a specific in almost all forms of neuralgias. In sciatica the relief from pain is instant. He gives pictures of cases of erythematous lupus, epithelioma, cauterizing nevus, treated with liquid air.

133.—Abstract will appear in next issue.

134. **Pulse in Diagnosis and Prognosis.**—In this article Jackson calls attention to the value of the indications shown by the pulse in various disorders, especially typhoid fever and meningitis. In the former disease he has come to the conclusion that the pulse of 120 is a danger signal, and in meningitis when the vagus is stimulated the slow pulse is often of diagnostic importance. It is only seen in the early stages, as after the vagus has been paralyzed by pressure or by disease we have an exceedingly rapid pulse. The value of the pulse in prognosis in typhoid fever is very great. A sudden rise suggests hemorrhage, if accompanied by a fall in temperature. In perforation it is of the greatest value. It may be rapid in complications, such as otitis media and phlebitis, without rendering the prognosis unfavorable, but with acute inflammation of the parotid, prognosis is grave, more so, indeed, he thinks, than when pleurisy or pneumonia complicates the disorder. In convalescence the pulse is often rapid without any very serious import. He, in conclusion, calls attention to a symptom which has not been much noticed, viz., a discrepancy between the rate of the heart-beat and the pulse as felt at the wrist. This condition may be said to represent the acme of cardiac weakness, and it may be responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart, or similar discrepancy and great dilatation of the heart in acute degeneration of the heart in infectious diseases, as in typhoid fever and diphtheria. He gives brief statements of two cases illustrating these facts.

136. **Improvements in Army Medical Service.**—Experience in the late war has suggested marked improvements in army medical service, which are summed up by Devine in the following paragraphs:

1. Physical examination of recruits; at first voluntary and now made mandatory.

2. Ration to be used at camp. Something after the pattern of army ration, but modified for adaptation to State service.

3. School for medical officers. One session annually.

4. Company bearers; four privates in each company specially trained in emergency and first-aid work.

5. System of red tape patterned after regular army, but modified for state service.

The following is a brief résumé of the suggestions offered to improve the efficiency of the army medical service. Some of them have been practically adopted by the Massachusetts Volunteer Militia, and it is hoped will be adopted by the entire National Guard:

1. That professorships of military medicine be established in every reputable medical college.

2. That until such time as professorships are established, the State provide a course on required subjects.

3. That physical examination of officers and men be made mandatory.

4. That troops at State encampments conform as nearly as possible to duties required in service on the field.

5. That every medical officer receive commission. (This pertains to contract surgeons.)

6. That one or more men in every company be detailed for regular instructions in ambulance corps, to prevent possibility in the future of the country losing the service of men especially trained for this service.

7. That one medical officer be selected in each regiment or brigade for his surgical ability.

8. That a corps of trained female nurses be organized in every state.

9. That divisional hospitals, in the broad sense, be abolished, and that small brigade and divisional hospitals be established for special cases, such as surgical and contagious.

10. That the volunteers follow, as closely as practicable, the regular army, so that when called into service together the two branches may work in harmony.

11. In addition to the present instruction in "first aid," a course in prevention of contagious diseases, etc., be given.

12. That a reserve staff of medical officers be formed in each state; said staff to be composed of ex-members of the medical department of the National Guard.

138. **Localized Tuberculosis of the Intestine.**—Mayo's paper calls attention to the subject of intestinal tuberculosis, and he reports seven cases operated on for this disorder. He also calls attention to the tolerance of operation in these cases and its benefits.

139. **Retroversion of Uterus and Functional Neurosis.**—Gardner concludes, after consideration of the subject, that uterine retroversion, while it may aggravate existing conditions, is not the primary cause of the functional neuroses sometimes attributed to it, and concludes her paper with the quotation from Dercum that: "There is no necessary relation between neurasthenia and pelvic disease. There is no relation between pelvic disease and hysteria even where the two affections coexist in the same case."

140. **Cerebrospinal Meningitis.**—Hirsh reports three cases of epidemic cerebrospinal meningitis, all diagnosed by a lumbar puncture, and he thinks that in one case the operation had decided therapeutic effects, while in the other two there was temporary relief. By relieving abnormal pressure and possibly getting rid of some of the toxins its beneficial effect can be readily conceived.

141. **Abdominal Injuries Due to Blunt Force.**—Three cases are reported by Fowler: One of rupture of ileac mesentery, with recovery, and another of rupture of the intestine treated by a resection and a Murphy button applied, with death. He reviews the symptoms in this class of injuries, calling attention to the special importance of temperature, pulse and vomiting. The latter is constant, but its significance depends on its persistency. As regards temperature, the diagnosis of grave intra-abdominal injury is made sure by a steady rise of temperature from the beginning, and in all cases by rise of the pulse-rate. If the initial symptoms of vomiting, temperature, etc., persist, especially the acceleration of the pulse, the diagnosis is fairly positive, and if in addition there is added marked increasing distension and steady increase of temperature the diagnosis is absolute. Operation must be early.

143.—See title 126.

145. **A Type of Tropical Fever.**—Von Wedekind's communication is in regard to a common type of tropical fever usually known under the name of calentura, which he noticed in all the ports he has visited during the dry season. Its onset is sudden, without prodromal symptoms, except perhaps a slight sensation of chilliness quickly followed by a high temperature, gradually increased until 104 or 105 degrees are reached. There are general myalgic pains, headache, loss of appetite, weakness with gastric disturbance. Without treatment the case will convalesce in about seven days. It occurs mostly in dry seasons; quinin is without effect, but aconite relieves the discomfort better than any other remedy. The exposure to the sun appears to be its cause, and avoidance of this will in almost all cases prevent the fever.

146. **Osteoplastic Surgery.**—Remarking at first on the greater demand of conservative surgery at the present time, Manley notices the methods of restoring symmetry in compound and complicated fractures. After some statements as to the necessity of paying attention to the individual condition and the danger of too early interference in way of premature rough handling, he advises the first effort to be in securing complete and permanent hemostasis, cleansing and covering the parts and placing them in comfortable position. Then he ad-

vises a delay of forty-eight hours before determining the future treatment, as the patient is then better able to bear with success what is needed to be done. It is impossible in many cases to operate so as to make an effective and complete replacement in primary manipulations. Frequently the desired result can only be obtained by secondary osteoplastic measures after union has taken place. He combats the rather established opinion that it is unsafe and unadvisable to make compound out of simple fractures; it is a mistake to assume that all compound fractures are slower in uniting than are simple ones. Under modern methods this is by no means always the case, and he says that free incision is justifiable for the purpose of treatment, but not for diagnosis, excepting in skull fractures. Secondary osteoplasty is one of the best achievements of modern surgery, and in medicolegal cases in the future involving serious fractures where the working value of a limb is to be estimated, the question whether all the resources of osteoplasty have been exhausted must be answered before any definite estimate of the extent of permanent injury is made. In conclusion he talks of the advantages of osteoclasis in acute angular deformity of the thigh, with shortening of the limb.

147. **Angioneurotic Edema.**—After a discussion of some of the literature of the subject, Baruch describes four cases of this disorder, two of which were distinctly traceable to intestinal autointoxication.

148. **Malarial Hemoglobinuria.**—Steggall reports three cases of malarial hemoglobinuria, and concludes from his experience that: 1. Quinin causes irritability of the kidneys and may cause hemoglobinuria. 2. Malarial attacks in chronic cases with malarial cachexia may cause hemoglobinuria. 3. In these cases quinin has lost much of its specific effect, and large doses must be exhibited. Should there be a periodicity, we must give the quinin before the time of attack. 4. The action of quinin must be assisted by such drugs as iron and arsenic, and, more important even than quinin, the liver must be acted on well and the effect kept up. He has never been able to cure an attack of hemoglobinuria without getting the liver active. The bilious vomiting in these cases sufficiently indicates the necessity of this.

149. **Concealed Menstruation.**—Brothers reports cases in which the menses disappeared at the age of 39, but the symptoms recurred at regular intervals and in very severe form. On examination a cystic tumor was found in Douglas' cul-de-sac, which was punctured through the vagina and a large amount of dark unclotted blood escaped. A second tumor also existed and laparotomy was performed; both specimens consisted of ovarian sacs communicating with the corresponding Fallopian tube. The openings at the fimbriated ends were completely obliterated. He was first inclined to think that, in accordance with Tait's theory, tubal menstruation existed shut off from the uterine and peritoneal cavities, and had discharged itself into the substance of the ovaries, but lack of typical hematosalpinx led him to believe that he was dealing with a case of primary menstruation into the ovaries.

150. **Cutaneous Electrolysis.**—Leviseur describes his methods of electrolysis in the treatment of hirsuties, angioma, etc., and dwells especially on the importance of using the negative pole in operation. He emphasizes the fact that this is not simply cauterization, but may be better compared to a more accurate and equally distributed injection of a caustic solution.

151. **Facial Eruptions Due to Intranasal Disease.**—The point of Seiler's paper is that the swelling of erectile tissues of the lower or middle turbinated bones pressing on the capillary tissues of the septic mucous membrane produces disturbance in the circulation of the skin of the face, causing various eruptions. His observation is that since the introduction of cocain as a local anesthetic into nasal surgery, and its unfortunate application by the laity for the temporary relief of nasal obstruction, it has largely increased the frequency of these eruptions.

154.—See title 53.

156. **Conservative Gynecology.**—Gorden's paper discusses, at some length, the so-called conservative and radical measures resorted to by surgeon-gynecologists. Conservative gynecology, it is pointed out, demands saving health rather than diseased or useless organs. The writer concludes that in all operable cases, in women past the child-bearing period, when uterine fibroid exists, hysterectomy is by far more conservative than myomectomy. Only in comparatively young women are we justified in doing a myomectomy when it is found necessary to make an abdominal section. Again, it is pointed out that fibroids are seldom single, and after myomectomy the development of an unsuspected fibroid is sometimes rapid, demanding a second operation. Myomectomy is attended by as high a mortality as hysterectomy; this conclusion is based on ninety cases of myomectomy with four deaths.

157. **Complete Monocular Blindness, Recovery.**—Posey's patient, while romping with another child, received a severe blow over the left eye; after thirty-six hours a severe pain developed back of the left eye, the sight gradually and progressively became dim, and resulted at the end of the fifth day in total loss of vision in that eye. The treatment followed was that of depletion; rest, leeches, salines, and a course of mercurial inunctions were resorted to; after three days improvement was observed; further treatment resulted in a complete restoration of sight within a few weeks. The lesion in this case was considered either a retrobulbar hemorrhage or extravasation, sufficiently extensive to interrupt the function of the fibers of the optic nerve. The writer considers it probable that as a result of the transmitted force attending the blow over the eye, the sphenoid bone was fractured, the roof of the sphenoidal cells being especially involved in the injury. This supposition is supported by the fact that the loss of sight began in the upper part of the field, which would indicate that the inferior portion of the nerve was first involved, the complete blindness which followed would indicate a gradual involvement of the entire nerve trunk.

158. **Typhoid, Death One Week After Onset.**—The onset of the symptoms was abrupt, delirium developed rapidly; cyanosis, clammy perspiration, rapid and difficult respiration, hyperpyrexia, cough and the physical findings at the base of one lung led to the diagnosis of lobar pneumonia. The patient was placed on a supportive treatment. The following day, some typhoid symptoms were observed. Under the suspicion that the diagnosis was incorrect, the Widal test was resorted to and the positive clump-reaction obtained. Subsequently the patient died; bacteriologic examination of the cultures taken at the time of autopsy showed typhoid bacilli in the spleen and mesenteric glands. Cultures made from the material in the bronchial tubes and lungs showed the presence of staphylococci. The anatomic diagnosis was typhoid fever and bronchopneumonia. The unusual extent of the involvement of the solitary and agminated follicles in the intestines is to be noted; the ileum, the colon even as low as the sigmoid flexure, was thickly studded with enlarged lymphoid nodules. The extensive distribution explains the violent short course of the disease. All intestinal lesions were in the first stage of swelling and infiltration; no ulcers were found. The spleen was greatly enlarged, and, together with the liver, had been displaced upward by the enormously distended intestines. The diagnostic value of the Widal test was well demonstrated in this case.

159. **Acute Diabetes.**—Three rapidly fatal cases of this rare disease are reported by Elsner. The first occurred suddenly, in a child of 5 years, a few weeks after receiving an injury to the head. There was great thirst, polyuria, and the urine, heavily loaded with sugar, had a specific gravity of 1042; within ten days the child died in a comatose state. The second case, also occurring in a child, but without any suggestion of head-injury, suddenly developed great thirst, voracious appetite, and glycosuria. The child died before the ninth day, comatose, with symptoms of acetonuria. The third case occurred in a man of 45 years, who had enjoyed usual health. Within a few hours after exposure to cold and wet weather, he complained of dysuria, which was soon relieved by a continuous dribbling of the urine, hiccough, with mental hebetude. The bladder was enormously distended, and when withdrawn, the urine had a specific gravity of from 1015-1025, as much as five gallons of a 3 per cent diabetic urine being withdrawn in twenty-four hours. The disease terminated fatally within one week. There was no evidence to show that this patient had any pancreatic or other associated diseases, nor was there any hereditary tendency.

FOREIGN.

British Medical Journal, August 5.

Recent Advances in Practical Medicine. RICHARD DOUGLAS POWELL.—In his address in medicine, Dr. Powell notices the recent advances that have been made in instruments of precision and methods of diagnosis, modern studies in bacteriology, serumtherapy, preventive inoculation, the prevention of tuberculosis and the relation of soil to disease. The paper ends with a tabulated statement of the action of the different serums with reference to bactericidal, antitoxic, and prophylactic qualities. Among those decidedly antitoxic and prophylactic he includes the antistreptococcus serum and snake poison, and as of special prophylactic value, though not antitoxic, the protective serums of plague, cholera, anthrax and yellow fever. Tetanus is still somewhat in question, and the antitoxic action of the diphtheria antitoxin is, of course, understood.

Address in State Medicine. GEORGE WILSON.—The address of Dr. Wilson in the Section on State Medicine, before the British Medical Association, is notable for its antivivisection ideas, even going so far as to doubt the value of the diphtheria antitoxin. He claims that bacteriology has led us in false lines in assuming that the pathogenic microbe of any disease is the primary cause.

Etiology of Malarial Fever. GEORGE THIN.—The address of Dr. Thin gives one of the most thorough and complete statements of the insect theory of the origin of malaria, from the earliest speculations on the subject by Nott, King and others down to the completed investigations by Ross, Bignami, Grassi and Bastianelli. In the concluding part of his paper he shows up the advantage of the military medical school at Netley for the study of tropical diseases, and expresses a hope that it may be opened to civilians in the near future.

Lancet, August 5.

Some Structural Varieties of Enlarged Prostate Relative to Its Treatment. REGINALD HARRISON.—Remarking first on the different results from the various operations for enlarged prostate, Harrison states that there are at least three varieties of this disorder that are not uncommon, and yet widely different. In the first we have enlargement proceeding from blood engorgement, more or less chronic in its nature, so that the organ is somewhat assimilated with the erectile structure. In the second form there is a fibrous degeneration, and the symptoms are those of local irritation, much as in the case of vesical calculi. In the third form the enlargement of the prostate may be said to be self-contained, and consists of an almost isolated mass of tissue resembling an adenoma, which, like the kernel of a nut, easily shells out and can be enucleated. He asks what surgical or pathologic analogy there can be between these conditions, other than their location, and what good is likely to follow a uniform operation in all three cases? For the first form he thinks that vasectomy is indicated, while in those of the second and third, prostatectomy has been successfully practiced in many cases. Vasectomy, which is a comparatively harmless operation, has been found to greatly relieve vesical irritability and prevent the recourse to the use of the catheter.

Origin of Antitoxin: Is It Present in the Blood of Some Normal Animals? L. COBBETT.—In Cobbett's article, he is inclined to accept the "Seitenkette" theory of Ehrlich, that is, that there is in the cells a certain portion of protoplasm which has the power of entering into chemical combination with a given toxin. As regards the question whether antitoxin is formed out of its corresponding toxin, or is an independent product, it is as yet an undecided question, with the probability in favor of the latter. Cobbett reviews the experiments as to the existence of antitoxin in the blood of normal animals, and finds that in certain cases, especially in horses, there is in the normal serum a power of neutralizing the toxins of diphtheria. Whether this is due to the presence of a diphtheria antitoxin or not, it does not follow that it is a normal constituent of the blood. The fact that it is absent in many cases is against such a supposition. He asks whether it might not be of advantage to study the suitability of an animal for the production of the antitoxin, as we know that at present there is a vast difference in this regard between them. Whether the presence of antitoxin in the blood has any relation to this matter or not, he can not positively say, but he is working at the subject and hopes to make a further communication in regard to it.

Bulletin de l'Academie de Medicine (Paris), July 18 and 25.

Relations Between Dermatoses and Gastric Affections. A. ROBIN AND LEREDDE.—This important communication is based on a study of 129 cases of cutaneous affections occurring among 422 dyspeptics. The fact is established that in all these cases there was a gastric fermentation with the formation of lactic or butyric acid. The excretions of these acids through the skin irritates the nerve-fibers in the skin and causes pruritus, prurigo, eczema, acne, etc. The acidity of the sweat is twice and three-fold the normal acidity, and constant, after jaborandi has been administered. Thirty cases studied more closely showed that the metabolism was diminished, the elimination of nitrogenous matters imperfect and that there was less phosphoric acid, with a higher coefficient of mineralization. The therapeutics indicated by this conception of the autotoxidermic origin of dermatoses have proved wonderfully successful. One case, a man of 50, with diffuse prurigo and eczema which had resisted all treatment for twenty years, was entirely cured in two months, "very much to his surprise." The first step is to determine the character of the dyspepsia and treat it even when there are no clinical evidences of gastric disturbance. The next step is to note the general disturbances in nutrition and the special disturbances, if any exist, and treat them also; ammonium fluorid, if the gastric fermentation is due to lactic acid, and biniodid of bismuth and cinchonidin (erythrol), if to butyric acid. A strict sterilized milk diet may be required in certain old cases; local treatment as usual.

Transient Acute Aortitis of Malarial Origin. POTAIN.—It was objected to Lancereaux' communication in regard to malarial aortitis (see abstract in JOURNAL, p. 345), that the malarial infection was probably a mere coincidence in his observations. A convincing argument in his favor is the case now described by Potain, in which a young soldier in Algiers contracted malarial infection and for nine months had intermittent fever and diarrhea. Returning to France the fever recurred every second day. The heart sounds were distinct and clear, with no abnormal sounds. The area of total dulness covered ninety square centimeters. The portion corresponding to the aorta extended 2 cm. beyond the sternum. The fever yielded to quinin and the aorta gradually receded until it ceased to encroach beyond the sternum by the tenth day. This transient enlargement could not have been due to increased blood-pressure as this had been, and is usually, exceptionally low in intermittent fever, later returning to normal. The distension of the artery could only have been due to diminished resistance in its walls, and this diminished resistance to the malarial infection. Repeated or protracted infection is therefore liable to in time lead to specific alterations in the walls corresponding to the extent of the functional modification.

Ganglionary Pseudolymphadenic Tuberculosis (Tuberculous Lymphoma). P. BERGER.—"Histologic investigation is the only certain means of differentiating lymphadenoma from ganglionary tuberculosis, confirmed by inoculation and extirpation is the only certain treatment, although arsenical treatment and especially a course of Bourboule waters, may be tried if patients have leisure and means for it." The extirpation is generally easy, and free from much danger, as the engorged ganglia are encapsulated, circumscribed, and without adherences to the cellular tissue and neighboring organs. It is only necessary to remove the ganglion or ganglia constituting the chief mass of the tumor, as the secondary engorgements frequently subside after extirpation of the rest.

Human Coccidiosis. CORNIL.—Three observations of tumors in the subcutaneous cellular tissue or serous bursæ are described, the tumors formed of a multitude of pockets filled with a yellow-brownish, creamy or viscous and mucous puriform fluid, containing yellow calcareous grains, fragments of capsules of coccidii or complete egg-shaped capsules or several egg-shaped bodies contained in a single capsule. The existence of coccidiosis in man is thus established. The cavities were lined with inflammatory tissue with a border of large giant cells. Cornil has previously noted the significance of giant cells as an indication of the struggle of the organism against foreign bodies, and particularly against small parasites.

Frequency of Herpetic Manifestations in Influenza-Grippe. VIDAL.—The frequent appearance of herpes, zona and herpetic manifestations on the mucous membrane of the mouth,

ears, etc., in the course of la grippe, in his experience, leads Vidal to enquire whether others have noted this coincidence and whether some of the la grippe symptoms may not possibly be due to a localization of herpes on the brain or internal organs.

Journal de Medicine de Paris, July 23 and 30.

Protracted or Recurring Diphtheria. H. BARRIER.—In the case reported, slight septic complications and evidences of bulbar intoxication recurred several times after apparent recovery; sometimes accompanied by the formation of pseudomembranes, and again not. Each recurrence yielded to serum treatment, which finally dispelled the infection. One of the most frequent and reliable indications of this diphtheritic bacillosis is tachycardia with weak and arhythmic heart action. Barbier urges the necessity of serum treatment in these cases, even in the absence of all pseudomembranous neoformation.

Symphysiotomy Without Consecutive Immobilization. G. FIEUX.—The extremely successful results attained in a case in which symphysiotomy was performed when the fetus was in jeopardy, the heart beat 100, dull and irregular, induce Fieux to recommend the method followed, which was simply to carefully suture the coaptated parts and paint the wound with a little steresol—gum lacquer dissolved in alcohol. No appliance of any kind was used, and the next day the patient could raise the buttocks and move her limbs without pain or effort, like her neighbors in the ward, and got up the fifteenth day. After the seventeenth day, she could go up and down stairs as nimbly as before the operation. The non-interference with the post-partum care is a special advantage of this simple method.

Nord Medicale (Lille), July 15.

Pernicious Malarial Infection, Failure of Quinin, etc., Cured With Hydrotherapy. G. LEMOINE.—The observation reported is noticeable on account of the absolute failure of all therapeutic measures and the prompt and permanent recovery after the application of the cold douche at 10 C., for six seconds to one minute, avoiding douching the region of the liver and spleen. The patient, a man of 31, was robust until after a month at Beyrouth and an attack of influenza on his return to France, followed by the indications of pernicious paludism.

Presse Medicale (Paris), July 29.

Hysterectomy in Acute Puerperal Infection. T. TUFFIER.—In acute postpartum septicemia without peritoneal or annex localization, Tuffier advocates hysterectomy as justifiable and no more difficult than any hysterectomy when the facts of the extreme friability of the uterine tissues and of the vessels are borne in mind. The rock to be avoided is cutting through the tissues with the forceps, which should be applied in stages. He has collected thirty-five observations, including three personal, of such cases thus treated, and the results have been that thirteen were saved although in an apparently hopeless condition. A number of the rest were probably beyond all aid, as any innovation of the kind is always first restricted to absolutely desperate cases. He considers the uterine muscular tissue the seat of infection and starting point for the toxi-infectious accidents in these cases without tympanism, pelvic sensitiveness, much vomiting or visceral infectious localization and no suppuration found at the autopsy. In one of his own observations the temperature persisted at 41.5 C., even after curetting, irrigating and disinfecting the uterus, etc. It fell to 37 degrees in less than twenty-four hours after the uterus was removed by the vagina, and staphylococci and streptococci were found in scrapings of its inner surface. Prompt and rapid recovery followed.

Revue Generale d'Ophthalmologie (Paris), July 31.

Acute Optic Neuritis from Uricemia. ANGELUCCI.—A number of cases of uricemic optic neuritis are on record, but they have been classed with the manifestations of rheumatism. The symptoms of the retrobulbar form are the same in each. The reasons for assuming an uricemic origin are that the optic neuritis appeared in subjects with pronounced uricemia and progressed in spite of all the usual local remedies, but yielded promptly to salicylic treatment. In a few cases the uricemic manifestations coincided with the aggravations of the ocular affection. In each case the visual disturbance appeared abruptly, and the sight improved with appropriate treatment notwithstanding aggravation of the ophthalmologic signs. Another point is that in seven out of fifteen cases there was central scotoma.

Revue Hebd. de Laryngologie, etc. (Bordeaux), July 22 and 29.

Chancriform Ulceromembranous Amygdalitic. RAOULT AND THIRY.—Study of several observations of this affection, which deceptively simulates both chancre and diphtheria, has demonstrated that it is an affection analogous to ulceromembranous stomatitis, and may possibly be only an unusual localization of it; that the amygdalitis is caused by a necrosis of the tonsil tissue extending inward; and that it is due to the presence of the spirillum and spindle-shaped bacillus described by Vincent. The three personal observations happened to be all medical students; two had a recurrence. In two cases of ulceromembranous stomatitis without tonsillar lesions, the same flora was found, also in a case of ulcerated gingivitis. The spirilla were found in a syphilitic chancre, but not the bacilli, which are always associated in the affection described. The bacilli are larger than the Loeffler bacillus, will not grow on serum, do not take the Gram stain and are often found end to end, with vacuoles. The usual methods of inoculation and cultures have failed, but mixed anaerobic cultures have recently been successfully grown.

Adenoid Vegetations in the Adult. JANKELEVITCH.—This puzzling case of adenoiditis with acute "pushes," accompanied by hemorrhages, and dry laryngitis, was diagnosed tuberculosis, until the vegetations were discovered and removed, when the hemorrhages and cough ceased, although some months were required before the laryngitis was completely cured. The patient was a butcher aged 29 years.

Berliner Klinische Wochenschrift, July 17.

Case of Tetanus Puerperalis Treated With Dural Infusion. E. v. LEYDEN.—The tetanus antitoxin was introduced directly into the spinal canal, and also injected subcutaneously, in a case of very severe tetanus consecutive to a traumatic three months' abortion. Improvement was evident at once, suggesting the greater effectiveness of the antitoxin when introduced into the nervous system direct.

Cerebral Tumor. JOLLY.—This observation demonstrates the benefits to be derived from simple trephining in case of inoperable tumor. An unusually large glioma of the right central convolution had grown through the skull. The patient was very much relieved and improved by trephining, and the improvement lasted a year. Excision was impossible on account of the depth of the growth.

Infectious Character of Chorea and Its Connection With Acute Articular Rheumatism. WESTPHAL, WASSERMANN AND MALKOFF.—Westphal reports observations of three girls with severe chorea, producing hallucinatory mental disturbances; in each case the chorea was consecutive to acute articular rheumatism, and acute endocarditis in one. Albuminuria and herpes labialis were also present. One patient, 19 years old, first had the acute articular rheumatism; a month later the chorea and herpes labialis appeared and death followed an extremely violent delirious state with high fever and collapse. The autopsy disclosed endocarditic deposits on the mitrals and fresh parenchymatous nephritis. Cultures were derived from the blood, brain and mitrals, which produced severe joint affections in rabbits, introduced into the circulation, as proved in eighty animals, and the same diplococcus, a kind of streptococcus, was found in the joint effusions. The incubation period was three to ten days.

Deutsche Medicinische Wochenschrift (Berlin), August 3.

Vascular Changes During and After Artificially Induced Anemia. A. BIER.—The hyperemia which follows release of an Esmarch tourniquet is usually attributed to a paralysis of the vasomotor nerves by the constriction, which causes relaxation and dilation of the arteries. Bier denounces this assumption and describes numerous experiments which demonstrate that any diminution in the arterial current in any part of the body, causing this part to be insufficiently supplied with fresh blood, materially reduces the resistance to the arterial current in this part. This decreased resistance is most conspicuous when the blood-stream is totally arrested for a while and then allowed free course again, and the result is extreme hyperemia. This diminished resistance is not a paralysis of the vessels in the usual sense, as it does not occur in the venous circulation. Instead of paralyzing, it stimulates

the arteries and capillaries to contract, and thus drives the blood out of them into the veins. It is this property of the vessels which produces collateral circulation until the arterial collateral routes are sufficiently enlarged, and it is a peculiarly useful and necessary vital process.

Improved Needle Holder for Curved Needles. V. SCHULTZ.—The jaws of an ordinary rack needle holder are hollowed out lengthwise inside, the concavity tapering to the point, which is sloped off obliquely. The edges of the lengthwise concavity and of the oblique ends are provided with fine teeth. The needle thus fits into the space and is held by two pairs of firm supports while the middle portion is untouched.

Muenchener Medicinische Wochenschrift, August 1.

Gonococcus Toxin and Its Action on the Nervous System. M. J. MOLTSCHANOFF.—White mice, rabbits and guinea-pigs injected with toxins derived from an unfiltered 20 to 25 days' culture on bouillon and hydrocele, heated to 70 C. for 15 minutes, to kill the cocci still alive, showed most distinct and pronounced alterations in the nervous system as the result of the action of the toxin. In cases of acute intoxication these alterations are most evident in the cells of the anterior cornua of the spinal cord, next in the cells of the intervertebral ganglia and least in the cells of the nuclei in the medulla and cerebral cortex. In cases of chronic intoxication the most prominent manifestations are symptoms of a degenerative neuritis, with occasionally degeneration of the posterior roots and posterior columns of the spinal cord. The toxins were injected into the abdominal cavity or a vein.

Capacity of the Urethra and Syringes. H. LOEB.—Investigation of fifty patients with subacute or chronic gonorrhea and others resulted in the discovery that the capacity of the anterior urethra varies from 6 to 20 c.c. in different persons, healthy or diseased, although there are no external means of gauging its size; age, physique, appearance, are frequently deceptive. As it is necessary to adapt the injection to the capacity of the cavity, Loeb advocates determining this capacity for each individual case by measuring with a graduated syringe or irrigator, and then ordering a syringe for future injections of the exact size required. He uses a syringe holding 20 grams of a warm solution of potassium permanganate the piston rod graduated for centimeters. The filling urethra and increasing resistance indicate the moment when the anterior portion is fully distended.

St. Petersburger Medicinische Wochenschrift, July 8 and 15.

Pemphigus of Upper Air-Passages. R. OTTO.—In connection with a detailed observation of a case of chronic pemphigus of the upper air-passages, and of the conjunctiva, Otto asserts that the difference is not pathologic nor anatomic, but merely a difference in degree, between the bullous-exfoliating form of pemphigus and the adherent-fibrinous form. The favorite location for the former is the nose, soft palate, throat and larynx, with a tendency to extend to the conjunctiva of the lids. The second variety appears on the cheeks and tongue, extending later to the throat and larynx and leaving the nose and conjunctiva untouched. The terminal phases of the first variety are a thickening, shriveling and growing together of the membrane, while these processes have not been noted in the few observations of the latter variety on record. The bullous form affects weakly, and the other robust, persons. The one point in common with both is the chronic and obstinate character of the process. The etiology is still obscure.

Wiener Klinische Rundschau, July 2, 9, 16 and 23.

Sexual Perversion Among Insane. P. NAECKE.—The practical conclusion of this careful study of the hundreds of inmates of the Hubertusburg asylum in Saxony are that imbeciles and idiots should have separate institutions, as they far outnumber all the other cases of sexual perversion, and incite others to imitate or join in their practices, or more readily fall victims. Habitual criminals also should not be allowed to mingle freely with the other inmates, particularly the females, as they introduce new practices. Naecke considers it unproved that onanism can produce a mental disturbance per se. The disposition to extreme onanism is the first symptom of the encroaching psychosis. Sexual perversion is very rare among the cases of paralysis, and was only noted in a few instances of male onanism and exhibitionism, and female masturbation after excitement. Cases of homosexual perversion were remarkably rare. He was unable to distinguish any markedly unfavorable influence of the onanism on the course of the mental affection in any case, "although the prognosis with excessive onanism is bad, as such an abuse can only occur in extreme degeneration, congenital or acquired. It may eventually render the mental affections worse, but this rarely happens." Prospect of improvement of the mental affection by breaking up the habit is only possible in fresh cases with incessant onanism, but all should be examined for phimosis, a too short frenulum, or inflammation of the genitalia, which may be the cause. Little can be accomplished with any except prophylactic measures; close supervision of the water-closets, no dark corners, no beds placed together, etc. Naecke thinks that much might be learned by comparison of such records from various institutions, with especial study of the dreams, etc.

Recurrence of Syphilitic Affections of the Eyes, and Means to Prevent It. GALEZOWSKI.—Twenty years of observations and tests have demonstrated that syphilitic affections of the iris and conjunctiva are cured as the syphilis yields to specific treatment, but that affections of the choroidea persist and recur as the last lingering manifestations of the infection. The only effective treatment is local friction kept up daily for two years, with a pause of four days after ten, but never over three weeks' suspension. His experience has been that the best preparation is of mercurial lanolin salve, from .5 to 2 grams, rubbed into a different spot each day. Potassium iodid is not only ineffectual, but is directly injurious, as it induces conjunctivitis, although it may occasionally be indicated to neutralize the effects of excessive specific treatment.

Wiener Klinische Wochenschrift, July 20 and 27.

Thread Formation in Serum. R. KRAUS.—The serum reaction noticed and called thread formation by Pfaundler (see JOURNAL, xxxii, p. 935), is a phenomenon which occurs with certain micro-organisms under the influence of an agglutinating serum, as confirmed by Kraus. But he asserts that agglutination invariably precedes it, and is of more constant occurrence. It is governed by the same laws as agglutination in general except in respect to the bacillus coli; a non-specific serum can produce both phenomena with this bacillus.

Uterine Myomata and Pregnancy. R. CHROBAK.—Myomata were found in 862 cases out of the last 30,000 patients at Chrobak's gynecologic clinic, or 2.8 per cent of the total. Of these, 284 were sterile; 148 had only one child. It is his opinion that myomata are not frequently the cause of sterility, but he considers statistics almost valueless in this respect, as we have "no even half-way reliable statistics for comparison, in regard to the fertility and sterility of marriages, as it is so uncertain whether conception is prevented or not." He has frequently witnessed the hypertrophy and retrogression of a myoma parallel with the development and involution of the pregnant uterus; in one instance a myoma the size of a nut increased to the size of an apple and then returned to its former size, four times in succession. But usually it does not subside. A case is described in detail in which the pressure of a subserous myoma, growing from the upper posterior surface of the uterus, had twisted the gravid organ on its axis. As the uterus had developed the tumor had been pressed down into the small pelvis. As term approached it was manually reduced and pushed up into the abdominal cavity, but symptoms of peritoneal irritation appearing, the child was safely delivered by abdominal Cesarean section and the myomatous uterus extirpated. Smooth recovery followed.

Abnormal Sweating. J. MARISCHELER.—A peculiar case of neurosis is described in this communication, distinguished by abnormal functioning of the sweat center and nervous depression. The sweat drops form profusely in all weathers, but, strange to say, the maximum is in the coldest, the minimum during the hottest months. This hyperidrosis is limited to the trunk, face and upper extremities. Study of the metabolism showed retention of Cl, but this is probably only apparent, and the Cl is eliminated in the perspiration. The subject, a young Jew, is otherwise normal but feels too weak to work. The affection is of several years' standing.

Acute Lymphemia. F. PINELES.—Examination of the blood of a woman of 73, presenting the clinical picture of

acute leucemia—death the nineteenth day—showed a proportion of 1 to 6½ for the whites and reds; 96 per cent. of the leucocytes were lymphocytes; 3.7 per cent. polynuclear neutrophiles and 0.1 per cent. polynuclear eosinophiles. No nucleated red corpuscles were found. The lymph glands and spleen were much enlarged and the liver once and a half normal size. "The composition of the blood, the hyperplasia of the lymph-forming organs, the proliferation of the lymphocytes and the severe lymphoid degeneration of the bone marrow, entitle this to be designated a case of acute lymphemia, corresponding with the cases that have been observed of chronic lymphatic leukemia."

Revista Medica (Mexico), July 1.

Explanation of Sleep by the Slowing of the Protoplasmic Currents. A. L. HERRERA.—Sleep, according to this author, is caused by a retarding of the protoplasmic or neuroplasmic currents—in which life consists—by a lack of nutritive fluids, by congestion, by anemia or by cold, and is the same in the infusorium as in man. The currents persist but they are slow and languid, and the process of slowing up and becoming active again is extremely gradual. His summary for all living things is: Nutritive currents with the maximum velocity: Active life. Nutritive currents (sap, blood, protoplasmic currents), periodically retarded by the lack of reserves which are expended during the day: Sleep. The same, less active during the day, from inactivity, nervous excitement or other cause: Insomnia. Currents retarded by the action of cold: Hibernation. Currents retarded by a lack of moisture or completely obstructed: Latent life. General co-ordinated currents definitely arrested by coagulation, intoxication, hemorrhages, asphyxia, etc.: Death. Herrera considers all the movements of protoplasm from the amœbism of the rhizopodus to the amœbism in our brains, caused by an absorption of oxygen and a liberation of carbonic acid. He has succeeded in reproducing these supposed "vital processes" with a drop of printer's ink mixed with sodium bicarbonate and spread on a cover-glass moistened with tartaric acid, as he has previously announced.

Gazetta degli Ospedale e delle Cliniche (Milan), July 9, 22 and 30.

Antagonistic Influence of Syphilis on Tuberculosis. I. MONTEVERDI.—The influence of one disease on another has long been recognized, but few if any instances are on record of tuberculosis absolutely cured by a fresh syphilitic infection, as in the observation here reported. The night sweats, high fever, cough and Koch bacilli in the sputa, were banished by a mild syphilis which readily yielded to treatment. Six years have since elapsed, with no recurrence of the tuberculous symptoms in the now robust young man.

Location of the Parathyroids in Man. C. GANFINI.—The upper parathyroids, corresponding to the inner ones in animals, are situated at the junction of the upper third with the two lower thirds of the posterior surface of the lateral lobes of the thyroid body, as Ganfini has established by inspection of forty cadavers. The two lower parathyroids in half of the cadavers, were situated on the posterior surface, near the lower edge of the lateral lobes of the thyroid. In the rest they were below this lower edge, and from a few millimeters to 2 to 3 cm. from it, and thus located on the lateral surface of the trachea, surrounded by the retrosternal adipose tissue. In six of these latter cases the inferior parathyroid was connected with the cranial portion of the thymus, either right or left. He considers that these six cases prove not only the origin of the inferior parathyroids from the thymus, but also that the thymus in its descent carries them down with it, and, as it atrophies, they remain closed in its residuum, the retrosternal fat.

Osmotic Tension in Exudations and Transudations. ASCOLI.—Comparative cryoscopic study of the organic fluids has established the value of the variations in the freezing point of the exudations and transudations as a means of differentiating certain affections.

Tubercular Intoxication. S. MIRCOLI.—The peculiar luster of the eyes, and the tendency to mydriasis in tuberculous subjects, indicate a toxic origin, to which Mircoli also attributes the psychic disturbances and impulsive actions. In one case he has observed mydriasis and paralysis of accommodation on the side opposite the pulmonary lesion. He mentions an observation of a young man with a slight local lesion, and extreme cachexia, but no pulmonary symptoms, who reacted to a dose of .5 c.c. tuberculin more intensely than most persons to a dose of 50 c.c.

New Form of Anemia from Toxic Sera. ZENONI.—The serum of certain animals treated by injections of blood from animals of other species, became toxic for the animals from which the blood was derived. A few c.c. of this serum, injected into rabbits, produced a most acute form of fatal anemia, which fact may throw some light on the pathogenesis of primary anemia and of hematology.

Pathogenesis of Gout. CARBONE.—The assumption that gout is caused by a local hyperproduction of uric acid was practically tested by injecting urates into the spinal marrow, but without results. Injection of neutral urates or solutions of sodium biurates into the articulations also failed to produce inflammation or necrosis. But these phenomena were most intensely produced when adenin hydrochlorate was injected into the articulations. This alloxur base is produced from the nuclein in the bone marrow, in large quantities, and combines with uric acid to form a compound that is remarkably insoluble under certain conditions. Considering these two facts, in connection with Minkowski's recent assertions that he had produced uric infarcts in dogs by administering adenin per os, Carbone concludes that adenin must play a conspicuous part in the pathogenesis of gout. It produces necrotic and inflammatory processes in the tissues and binds uric acid in the form of adenin urate, which later becomes transformed into sodium urate.

Action of Venesection on Arterial Pressure. TREVES.—The arterial pressure and frequency of the pulse in twenty-seven subjects were studied with the sphygmograph before, during and after venesection and cupping. It was found that neither are capable of diminishing the arterial pressure: that the force with which the organism maintains it constant requires such an extreme degree of these mechanical means to conquer it, that it transcends the limits of therapeutics. Consequently, the explanation of the undoubtedly favorable results obtained by cupping and venesection must be sought in some other direction than in the diminution of the blood-pressure.

Cystocolostomy for Exstrophy of Bladder. BOARI.—The idea of utilizing the anus for a sphincter and transplanting the vesical flap in the lower portion of the intestine has been carried into execution twenty-one times. The result has demonstrated that a healthy intestinal mucosa does not suffer from contact with the urine in most cases, although a few instances of rectitis and colitis have been observed. Continence was perfect during the day in all, but relaxed at night in four. Pyelitis from ascending infection was only noted in two cases, and in each there had been previous renal disturbances. The bladder flap retains its vitality. Boari ascribes the success more to the distance of the cicatrix from the vesico-ureteral sphincter to avoid cicatricial constrictions, than to the retention of the sphincter. Experience has shown that ascending infection can be avoided and that uretero-enteric anastomosis is not incompatible with life.

Operative Cure of Prolapsus of Female Genital Organs. G. ORSINI.—The successful results in twenty-four cases treated by scraping the uterus, anterior colporraphy, Hegar's colpoperineoplastica and shortening the round ligaments, induce Orsini to recommend this procedure in high terms. Half of the number were treated over three years ago, and most lead particularly laborious lives. Only five had passed the menopause. The subjective results were not perfect in a few ultranervous patients, and the surgeon must be guarded in his promises before an operation of any kind on this class.

Thyroid Treatment for Bone Regeneration. FERRIA.—Two more cases are reported in which tardy regeneration after a fracture was hastened by the administration of thyroid extract. The thyroid gland was normal in each.

For Increasing Sound of Voice.—Complete removal of the larynx usually leaves the voice a faint whisper. Mikulicz has obviated this by a contrivance, described in the *Berliner Tageblatt*, on the principle of a whistle, which the subject can put to his mouth as desired and magnify the sound to a natural tone. It has proved very successful on the patient for whom it was devised, a man of 47.

Societies.

Jasper County Medical Society.—At the last meeting of this society, held at Newton, Iowa, the following officers were elected: President, L. C. S. Turner, Colfax; vice-president, W. H. Shaw, Monroe; secretary and treasurer, Harry P. Engle, Newton.

Kankakee Valley District Medical Society.—Physicians from the counties of Cass, Pulaski and Jasper met with the Starke County, Ind., Medical Society at Bass Lake, Ind., and formed a temporary organization by electing Dr. L. D. Glazebrook, president, and E. P. Mitchell, secretary. On motion the society was named "The Kankakee Valley District Medical Society." Drs. Washburn of Rensselaer, Thomas of Logansport, and W. H. Thompson of Winamac were selected a committee on constitution and by-laws. The society meets in North Judson, Ind., September 12. The Starke County Medical Society will meet in the forenoon and the district society in the afternoon to complete the organization. All physicians of Lake, Porter, Starke, La Porte, Fulton, Pulaski, Cass, Carroll, White, Jasper and Newton counties are invited to be present and aid in the organization. The organization will include ten to fourteen counties in northwestern Indiana.

British Medical Association.

(*Continued from p. 481.*)

RECENT ADVANCES IN PHYSIOLOGY.

J. J. CHARLES, M.D., F.R.S.E., gave an address on this subject before the Section of Anatomy and Physiology (see JOURNAL, August 12, p. 419), and said, in part:

Physiology is held by Max Verworn to have as its task, "the investigation of life;" but the nature of life is to us, as yet, a mystery. No doubt, we are acquainted with many of the phenomena which accompany it; but it has been truly said that "everywhere, to whatever branches of physiology we may turn, wherever the gross activities of the body are traced to the activity of the individual cells, we always come upon an unsolved problem." Thus, we can not explain, nor can we discover, how nervous impulses originate in the retina, and give rise in us, through the agency of the cerebrum, to the idea of the image; why the salivary glands secrete ptyalin, and the glands of the stomach pepsin; or why some cells of the mesoblast develop into muscle and others into cartilage.

The minute structure of living cell protoplasm is a question still open to discussion. According to W. B. Hardy, the four views at present held on this subject are: 1, that protoplasm is made up of a reticulum and a homogeneous fluid substance; 2, that it consists of a more or less solid material containing vacuoles, in which there is a fluid; 3, that it is a homogeneous jelly, with granules; and, 4, that it is entirely homogeneous. As a result of his observations on colloids, such as white of egg, and on the living cell substance of the pancreas and other glands, Hardy has come to the conclusion that the reticulum which may be demonstrated in fresh or fixed cell protoplasm is largely due to the physical and chemical alterations which occur in it at death, and to the action of fixing reagents on it which induce coagulation. Hardy has succeeded in making preparations with egg albumin, showing a reticulum very closely resembling that of protoplasm. One of these, a film fixed by steam, while flowing between two cover-glasses (Fig. 1), is very interesting, as exhibiting the *abrupt transition* from the network to the homogeneous substance similar to that demonstrated years ago by Schäfer, in the white corpuscle when fixed in the same way by heat.

The microscopic characters of striped muscle have not ceased to be a debatable subject among histologists. The interpretation given by Rutherford has met with much acceptance, and is undoubtedly supported by the examination of specimens of crab's muscle which have been prepared according to his method; but the recent researches of Hardy would lead us to look with suspicion on the appearances presented by this tissue after it has been subjected to the action of chemicals.

The contraction of muscle is believed by McDougall to depend on the elimination of lactic acid, causing the passage of the fluid sarcoplasm into the sarcostyles. Unstriped muscle has been found by Triepel in all the cerebral veins, but the muscle cells, he says, are isolated and mixed with white fibrous tissue.

By the use of osmic acid and uranium nitrate, with various dyes, Kolossow has demonstrated between the cells of the liver, testis, ovary, pancreas, and thyroid body, processes of connection which may serve for the conduction of impulses and the transference of nutrient materials.

The axis cylinders of nerve-fibers have been shown by St. Apathy, in invertebrate animals, to be made up of fibrils which terminate, in the case of the sensory cell, in a single basket around the periphery, and in the motor cell in one basket around the periphery, and a second around the nucleus. This view, in some respects, resembles that which Arnold advanced, years ago, as the mode of origin of nerve-fibers from nerve-cells.

It is now agreed that the amount of hemoglobin in the blood is not greater in the inhabitants of high altitudes than in those living at lower levels.

Gamgee has drawn attention to the absorption band in the extreme violet end of the spectrum of blood, which he has named "the band of Soret," after its discoverer. He has pointed out that not only is it more distinctive than the bands seen in the spectrum when examined in the ordinary way, but that it is absolutely characteristic of hemoglobin and its compounds; so that by this means they can at once be distinguished from bilirubin and urobilin as well as from carmin and all other coloring matters yet examined. This is a matter of practical importance, because this method may yet come to be employed in medicolegal investigations. Gamgee has indicated that the best and easiest way of demonstrating this spectrum is by means of an electric arc, a fluorescent screen, and a Bunsen's spectroscope.

R. Jarry has investigated the influence of reduced pressure and increased temperature in causing the compounds of silver chlorid with ammonia to dissociate somewhat like oxyhemoglobin. Perhaps the further study of such "loose" compounds may lead to an increase of our knowledge with reference to the properties of hemoglobin.

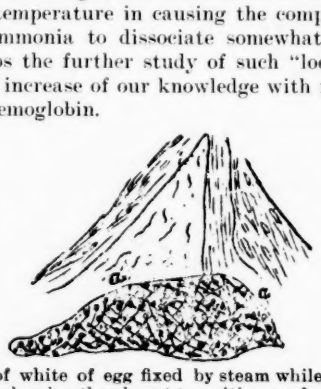


Fig. 1.—Film of white of egg fixed by steam while flowing between two cover glasses, showing the abrupt transition *a a* from network to the homogeneous substance (Hardy).

Haldane has discovered a quick and ready plan of liberating the oxygen of the blood by the use of potassium ferricyanid; but to insure success, the blood should be fresh, else bacteria will interfere with the result. Nicloux, employing Gautier's test for carbonic oxid—namely, that this gas has the power of decomposing iodic anhydrid and forming carbon dioxid, while iodin is liberated and absorbed by copper—has endeavored to prove its presence normally in blood; and Louis St. Martin has estimated the quantity in the blood of animals living in towns to be 1.5 c.c. per liter. But as it is possible that during the application of this test, while the blood is being boiled with acetic acid, carbonic oxid may be formed by combustion, in the absence of oxygen; and as several hydrocarbons at 60 degrees can reduce iodic anhydrid, and as other gases besides carbonic oxid might respond to the test in a similar way, the results of Nicloux and St. Martin can only be provisionally accepted.

A fully satisfactory theory as to the coagulation of the blood has yet to be discovered. Probably, we shall not find it till we are better acquainted with the chemical constitution of the proteids of the blood. The view, however, which meets with most favor, and is open to fewest objections, is that there are three agents or factors concerned in the formation of fibrin, viz.: 1, fibrinogen, which is present in the plasma; 2, nucleoproteid derived in part from blood platelets, but chiefly from the shedding out, or perhaps from the disintegration of the white corpuscles; and, 3, lime salts, in solution in the plasma. The nucleo-proteid, by the action of the lime, is changed into fibrin ferment, and this ferment reacting with fibrinogen transfers its lime to the chief constituent of fibrinogen—thrombosin—

and thus give rise to fibrin. Pekelharing is of opinion that fibrin is a *compound* of fibrinogen and lime, but it has been proved conclusively that fibrin contains no more lime than the fibrinogen from which it is derived. It is admitted that a lime salt is essential in some way in the coagulation of the blood, but the exact parts it plays is still undetermined.

Delezenne has succeeded in isolating an anticoagulant substance, of the nature of Lilienfeld's histon, from peptone plasma. He believes it is derived from the destruction of white corpuscles, but others hold that these corpuscles only leave the blood-vessels, and are not destroyed. The fact that a second dose of peptone injected into the veins of an animal shortly after the action of the first has disappeared, produces no anticoagulant effect, Delezenne explains by supposing that an antitoxin has been formed which protects the white corpuscles against their destruction by peptone. In favor of this view is the fact that the blood or serum of a peptonized or immunized dog when injected into the veins of another animal confers on it immunity from the action of peptone, snake poison, or extract of crab's muscle.

The formation of lymph is still a fruitful source of controversy. Some, as Heidenhain, regard it as in the main a secretion by the walls of the capillaries from the blood, while others maintain that it is the product of filtration and osmosis from that fluid. Asher and Barbèra have recently advanced the view that lymph is produced by the tissues and organs generally, such as the liver, the muscles, and glands; but the evidence in favor of it can scarcely be considered adequate.

Langley has caused the vagus and the sympathetic nerve in the neck of a cat to join together; and on applying stimuli, before and after the injection of nicotin, he has been able to prove that the nerve-fibers of the vagus make functional connection with the cells of the superior cervical ganglion of the sympathetic, and give rise to the same results on stimulation as the sympathetic did before the section.

There has been considerable discussion of late years concerning the causes of the entrance of oxygen into the blood in the lungs. Most physiologists, following Pflüger, and believing that the tension of oxygen in the blood is less than in the air of the alveoli, regarded diffusion alone as sufficient to explain the passage of the gas. But the results obtained, first by Bohr and recently by Haldane and Lorrain Smith, have induced many physiologists to consider this view untenable. Attention has accordingly been directed to the chemical affinity of the hemoglobin in the blood for oxygen. It is not likely that this affinity acts at a distance on the alveolar air; but undoubtedly the hemoglobin in the red corpuscles, by absorbing oxygen, is constantly lowering the tension of the oxygen in the plasma around them, as Foster has pointed out, and so indirectly causing more oxygen to enter the blood from the air cells by diffusion. The chemical affinity of hemoglobin is, therefore, an important factor, though it acts more as an aid to diffusion than as an agent or force by itself. Another hypothesis—that the cause depends on the secretion of oxygen by the endothelial cells of the alveoli, and perhaps by the capillary walls—has of late come into prominence. In favor of it we have the fact that in the secretion of urine, and *possibly* in the transudation of lymph, the endothelium containing living protoplasm discharges a somewhat analogous function. Again, there are some grounds for believing that epithelial cells may be the active agents in causing the passage of oxygen from the maternal to the fetal blood in the placenta. But the most important evidence in support of this view is found in the case of the swimming bladder of fishes, in which oxygen, nitrogen, and likely argon, are at one time secreted and at another absorbed under the influence of the nervous system.

Opinions are likewise much divided as to the causes of the exit of carbon dioxid from the blood in the lungs. Some physiologists endeavor to explain all the phenomena by diffusion; but we can not regard this process by itself as sufficient, if we accept Bohr's statement that the tension of this gas in the trachea is usually greater than its tension in the blood. But Werigo, while accepting this statement, has tried to prove that the diffusion hypothesis is correct. He alleges that the *actual* tension of the carbon dioxid in the blood in the capillaries of the air cells may be higher than the tension as made out by the aërotonometer, because oxygen on its entrance into the blood breaks up the compound of carbon dioxid and hemoglobin—a very doubtful compound—sets carbon dioxid free, and thereupon raises its tension in those blood-vessels. But these grounds are insufficient to establish Werigo's supposition.

With regard, then, to the exchange of oxygen and carbon dioxid in the blood at the lungs, I think it must be admitted that though diffusion plays an important part, it is by no means "master of the situation," but is supplemented and largely modified by chemical affinity and *possibly* by the vital or secretory activity of the endothelial cells.

Lorrain Smith infers from a series of experiments on birds and other animals, that while oxygen at the tension of the atmosphere excites the cells of the alveoli to absorption, at a higher tension (say 180 per cent. of an atmosphere) it gives rise in twenty-four hours to inflammation of the lungs, and at a still higher tension (say 300 per cent. of an atmosphere) leads, as first pointed out by Paul Bert, to convulsions like those of tetanus, owing to its toxic effects on the nervous system.

G. N. Stewart, by what is known as the electric method, and also by the injection of methylene blue, has determined in the dog the duration of the circulation as a whole, and he concludes that in man the pulmonary circulation would take fifteen seconds and the entire circulation one minute. This is a longer period than that hitherto accepted. The mean velocity of the blood in the larger arteries of the dog has been found to be about 100 mm. per second—a rate less than formerly believed. He has also by the electric method made investigations in the dog as to the output of the heart, and infers that the output in man would not be much more than three ounces of blood for each beat.

The old view—that a man may increase in weight without the use of food—has been revived. Bouchard has ascertained that the increase may amount to one ounce in an hour, and he attributes it to the absorption of oxygen, or to its retention in the body, along with the production of glycogen, and the imperfect oxidation of fat; but Berthelot believes it is due to the formation of new substances, and the imperfect oxidation of albuminoids.

Pembrey and Nicol, with a flat bulb mercurial thermometer, have made a large number of observations on the temperature of different parts of the body, and have arrived at the conclusion that the temperature of the rectum is 0.26 degrees higher than that of the urine, and 0.65 degrees higher than that of the mouth; and that the mouth is not as trustworthy as the rectum for clinical observations. Pembrey thinks that the mouth, by increasing the loss of heat, takes part in the regulation of the temperature of the body during exercise.

The extract of the suprarenal capsule was injected by Langlois into the veins of the rabbits and dogs, but its presence could not be detected in the arterial blood a few minutes afterward. There is reason to believe that it is destroyed principally at the liver.

Information has been obtained regarding the movements of the stomach by observations made on animals immediately after death, and by means of the Roentgen rays alone, or after the administration of bismuth subnitrate with the food, during life. It has been noticed that shortly after the entrance of food the stomach becomes almost completely divided by a transverse band of contraction, about three inches from the pylorus, into the fundus and antrum pylori. The fundus is for the most part at rest, retaining the food as a reservoir for digestion, but at intervals pressing it through the constriction into the antrum. The peristaltic contractions of the antrum—about six per minute in the cat—always proceed toward the pyloric valve, and drive its fluid contents into the duodenum; but any solid masses present which may be too large to pass, are forced back by the antiperistaltic wave into the fundus, to be further acted on by the gastric juice.

Bayliss and Starling, by means of a "rubber capsule" and by "enterographs" have studied the intestinal movements in the dog. They have observed two kinds of movements in the small intestine—the "pendulum movements" and the true peristaltic contractions. The former, slight swaying movements, are caused by rhythmic contractions of the circular and longitudinal muscular fibers acting *simultaneously*, ten times per minute, and traveling with a velocity of 2 to 5 cm. per second. The

latter—the peristaltic contractions—travel as a wave, always from above down, and are, they say, "true co-ordinated reflexes," started by mechanical stimulation of the intestine and carried out by the local nervous mechanism (Auerbach's plexus)." A local irritation of the intestine causes excitation above the spot stimulated and inhibition below it. Stimulation of the splanchnics leads to inhibition of the longitudinal and circular fibers; stimulation of the vagus nerves first produces a short inhibition and then augmentation. The splanchnics exercise a tonic action on the intestine, but the vagus nerves do not.

In connection with the peristaltic action of the intestine, it is interesting to note that Grützner has observed that liquids and particles, such as lycopodium spores, may, if placed in the human rectum, make their way to the stomach.

The entire stomach has been removed in man by different surgeons; the small intestine, nearly its whole length, has been cut out in the dog by Fillipi; and the large intestine, the greater part of it, has been excised in the dog by Vaughan Harley. In all these cases, when successful, digestion appears to have gone on as usual, except that after excision of the small intestine, fat was imperfectly absorbed, and after removal of the large intestine, proteids and water were only partially absorbed. Indeed, Mr. Treves, the eminent surgeon, states, as the result of his experience, that we "might possibly dispense with our present type of stomach;" and the removal of considerable portions of the intestine "has done no more than add to the comfort of those individuals who have recovered from the operation." It is probable that after these operations, the remaining parts of the alimentary canal took on vicarious or abnormal action, and thus adapted themselves to the changed conditions. It is also, no doubt, true that care was taken to administer food easy of digestion. We can not, therefore, attach much importance to the results of such operations and experiments as guides to the use of individual parts of the alimentary canal. It might as well be contended that because a portion of the cerebral cortex of a dog can be removed without inhibiting the performance of most of its ordinary functions, the portion so removed was unnecessary.

Vaughan Harley recently isolated a loop of the large intestine of a dog, and after some months, he found that the contents consisted of fat, cholesterin, proteid and salts—which, he thinks, form the normal excretion of the large intestine— in fact, its contribution to the feces. Another observer, Moraczewski, described the excretion in a loop after the lapse of a year as made up principally of sodium carbonate. Voit, by a similar plan, ascertained the secretion of the small intestine to be fat, cholesterin, proteid, salts, with coloring matter. But in these cases the intestine can scarcely be said to have been in a normal condition. At any rate, the results obtained are discrepant, so that it is difficult to know what inference should be drawn from these.

Carbon dioxid is a constant constituent of the gases in the intestines. It is the product of fermentation, and of the neutralization of the sodium carbonate of the secretions. Moreover, it is derived from the blood by diffusion, as well as given off in the small intestine by the bile, which, as I showed in 1881, contains in the case of the rabbit a larger percentage of this gas than any other animal liquid.

Waymouth Reid's experiments on the absorption of serum, peptone, and glucose from the intestines of animals by means of two loops of intestine—the experimental and the control loop—have led him to infer that the epithelial cells are essential agents, because absorption continues when filtration and osmosis have been excluded; and because it diminishes or ceases altogether after these cells have been injured or removed, as, for instance, when they have been poisoned with sodic fluorid, or when their blood-supply has been cut off. An attempt, however, has been made to explain results of this kind by the chemico-physical method. Thus, if we place a solution of gelatin in the inner cylinder of a dialyzer, and a solution of common salt in the outer vessel, the gelatin will not diffuse through the membrane, but owing to its affinity or "elective" action for the salt, will draw the salt to itself by what has been termed "adsorption." Similarly, it is alleged that the protoplasmic contents of the intestinal epithelial cell do not diffuse, but being complex in chemical composition may contain imbibing substances of various kinds. These substances are supposed to exercise an affinity for certain food stuffs, which they draw from the contents of the alimentary canal into themselves, and form "loose" chemical compounds with them, while they leave behind, untouched, other substances, for which they show no such affinity. Further, as cells differ in chemical composition, it is said, they will accordingly vary in their affinities; and it is alleged that it is no more extraordinary that epithelial cells should take up fat and not pigment, than that phosphorous should unite with oxygen and not with platinum. But that the cell contents have an affinity for such a substance as fat, and afterward form a compound with it, seems to be a mere conjecture: consequently this explanation, ingenious though it is, can not be accepted—if accepted at all—as having more than a limited application.

A few years ago it was authoritatively stated that bacteria are not only useful in digestion, but that death would ensue if the air and food used were sterilized. But the experiments of Nuttall and Thierfelder have shown this statement to be erroneous.

Aldehoff and Mering believe that they have proved by their experiments that the central nervous system exercises only an inhibitory influence on the stomach. They excised the vagus near the diaphragm, and observed that the movements of the stomach were unaffected; that the quantity of the secretion and the amount of hydrochloric acid in it were at first diminished, but afterward became normal; and that absorption was not interfered with. Riegel has experimented on the stomachs of animals after Pawlóff's method, and has noticed that atropin diminishes the amount of hydrochloric acid and of gastric juice secreted, but pilocarpin, especially if there was no food present, increases it five times.

Bunch, by using a plethysmograph for the intestines, has demonstrated the existence of vasoconstrictor and vasodilator nerve-fibers in the splanchnic nerves supplied to it, the vasoconstrictors being the more numerous. He has observed that nicotin, coniin, and peperidin cause great constriction of the vessels, followed by slight dilation; that stimulation of the central end of the vagus produces either constriction or dilatation of the vessels of the small intestine, while stimulation of the central end has no vasomotor effect on these vessels.

The process of internal secretion is carried on by many of the organs of the body. The action of the kidney in this respect is not yet fully understood, but the remarkable results of Bradford indicate that it has an important influence in the nitrogenous metabolism of the tissues of the body. Bradford has removed two-thirds of the total kidney weight, and has observed that the urine is much increased, but the urea only slightly so. However, if three-fourths be excised, there is an increase in both the urea and the urine excreted, with an increase of the nitrogenous extractives in the blood and in the muscles, to a rapid breaking down of their substance. W. H. Thompson has ascertained that normal salt solution causes a marked increase in the urine and in the amount of urea in it, but he does not offer any explanation of the fact.

Many are now disposed, with Heape, to believe that menstruation in monkeys is virtually the same process as menstruation in women; that, in both, "ovulation does not occur during each menstrual period, and that it does not necessarily occur during any menstrual period," and therefore may take place independently of it.

Vitzou has found that the blindness following entire removal of the occipital lobes in young monkeys may be recovered from in the course of two years. The recovery he attributes to the growth of new nerve-cells and nerve-fibers; but this supposition is very doubtful, as regeneration of nerve-cells is unknown in the higher animals.

Mott and Hill, after ligating all the cerebral arteries in cats, dogs, and monkeys, observed five to twenty-four hours afterward that the sensori-motor area of the cerebral cortex was in a very irritable condition, so that the application of a weak induced current gave rise to movements of the limbs, and sometimes even to fits. The cells of the cortex—their nuclei and processes—were all swollen, the granules of Nissl were altered, and the edges of the cells irregular. The interest in these results lies chiefly in the fact that corresponding changes have been noticed in the brains of persons who have died after prolonged epileptic convulsions.

Hodge and others, some years ago, described changes in the shape and size of the ganglion cells and of their nuclei as the result of fatigue. Recently, Lugano of Florence, by injecting Cox's solution—chiefly corrosive sublimate—into the carotid artery of a dog, killed it instantaneously, and at the same time *fixed* the nerve-cells of its cerebral cortex in the functional state they were in before death (Fig. 2). His results lead him to agree with Ramon y Cajal that nerve-cells and their larger branches are incapable of ameboid movements, such as we find in the white corpuscle, but to believe that the small processes of the dendrites—the gemmules—exhibit forward and backward movements sufficient to make and break contact.

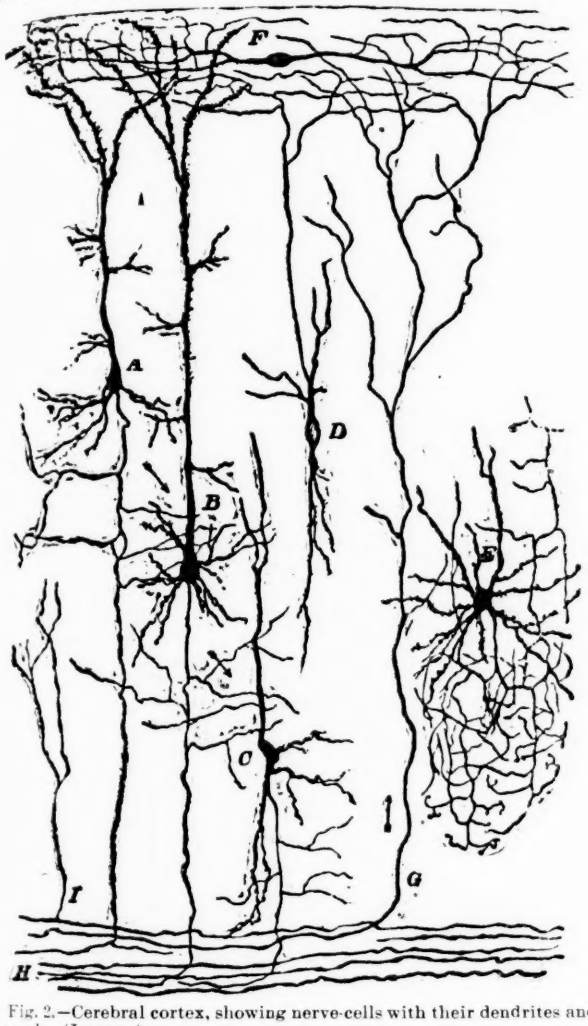


Fig. 2.—Cerebral cortex, showing nerve-cells with their dendrites and gemmules (Lugano).

Lugano thinks that the nerve-cell in a state of functional activity has few connections, lest the entrance of other impulses should interfere with the impulse which at the moment is being elaborated in its interior, and consequently the most of its gemmules are retracted (Fig. 3); but when it is ready to receive new impulses, the gemmules resume their expanded condition and approach others in their neighborhood (Fig. 4). In sleep as well as in the narcosis produced by chloroform, ether or chloral, the gemmules are usually all expanded and in a torpid state, their capacity for contraction being exhausted until sleep is nearly over. It is too soon to criticize the results of Lugano's experimental investigations and the ingenious theory he has based on them. But I may mention that Ramon y Cajal has not found any histologic change in the dendrites during activity; and that Alex Hill has adduced some reasons to show that Golgi's method is inadequate to prove a want of connection between the dendrites and unstained filaments in deed. Hill holds that the gemmules serve rather as a mode of connection between the edendrites and unstained filaments in the intercellular material. Then, if we keep in mind the possibility of some of the dendrites and gemmules being produced by the action of chemicals on the nervous tissue, as structure in protoplasm has been shown to be by Hardy, there are undoubtedly good grounds for withholding our assent to any histologic theory of brain activity till these questions have been settled.

Horsley and Lowenthal have found that the removal of the cerebrum in certain animals is followed by tonic contraction of the extensor muscles, and that in such animals the stimulation of the superior vermis of the cerebellum, at its junction with the lateral hemisphere, leads to the relaxation of the extensor muscles, and at the same time to contraction of their antagonists, the flexors.

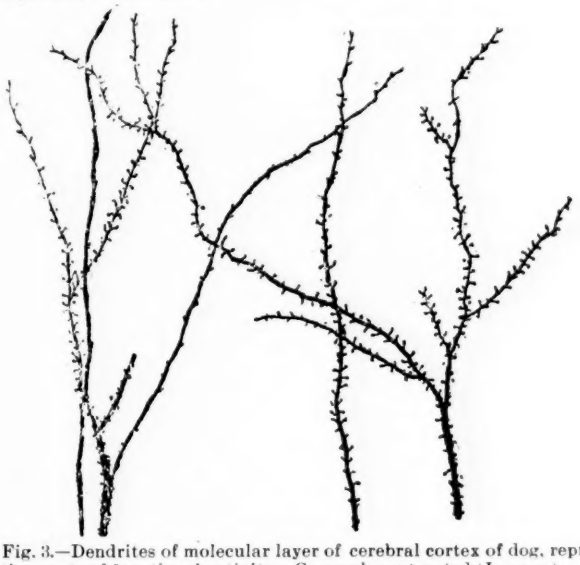


Fig. 3.—Dendrites of molecular layer of cerebral cortex of dog, repreenting state of functional activity. Gemmuleo retracted (Lugano).

It is now generally acknowledged that there is not sufficient evidence for belief in specific trophic nerve-fibers. The Gasserian ganglion and the part of the fifth nerve proximal to it have been excised, and no truly trophic effect has resulted.

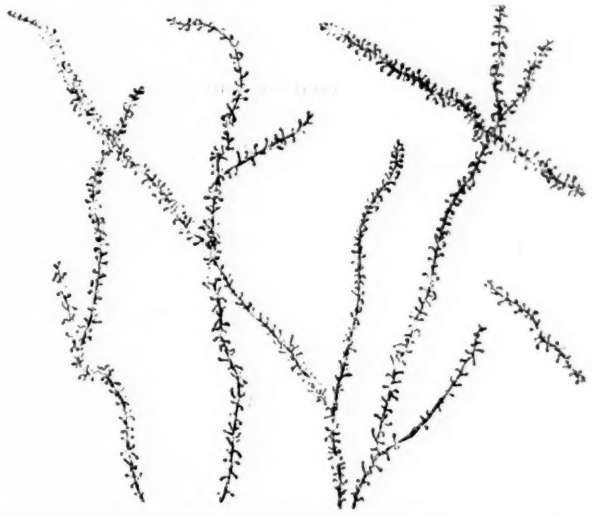


Fig. 4.—Dendrites of molecular layer of cerebral cortex of dog in chloroform narcosis. Gemmules expanded (Lugano).

A rare opportunity for studying the characters and the secretion of the cerebrospinal fluid has lately occurred to Drs. St. Clair Thomson and Halliburton in the case of a patient who is described as having had a "continuous dripping from the nose." The liquid on examination proved to be cerebrospinal, and amounted to half a liter in twenty-four hours. The flow was observed to be increased by the horizontal posture, by compression of the abdomen, and by forced expiration—all of which usually cause in the capillaries of the brain a rise of blood-pressure. According to Cavazzani, the cerebrospinal fluid varies somewhat in composition at different periods of the day—that collected in the morning being more alkaline, and containing more solids than that in the evening, the difference, it is conjectured, being due to the activity of the nervous system.

Our views of the functions of the spinal cord have been considerably altered of late years, owing to the remarkable results which have been found to attend operations made on it. Goltz and Ewald, after destroying the lumbar and sacral regions of the cord in dogs, have observed that these animals in the course of time regained the power of retaining and spontaneously evacuating the contents of the bladder and rectum, while digestion as well as parturition took place in them as in normal animals.

There is still doubt whether, and if so, to what extent, the afferent fibers decussate in the spinal cord. Some maintain that in man they decussate almost completely; others that they do so only partially.

Schäfer has recently made hemisections of the spinal cord in the monkey, and as the result of his investigations has come to the conclusion that Clarke's column atrophies almost entirely in two or three months, on the same side, below the lesion, and that the fibers of the pyramidal tract do not terminate in the anterior cornu, but in the base of the posterior cornu and in Clarke's column. If this be the case, efferent impulses descending from the cerebrum by the pyramidal fibers would influence the motor cells in the anterior cornu of the cord indirectly, though the afferent arm of the reflex arc, and not directly, as hitherto believed. This view as to the termination of the fibers of the pyramidal tract is, however, so contrary to the results of all past observers, that it should not be accepted until it has been confirmed by further investigations. Besides, it has yet to be shown how these fibers terminate in the lower portion of the cord where Clarke's column is absent, and also that they are not diffused fibers belonging to some other descending tract. In addition, he has traced, he believes, the fibers of the descending anterolateral tract to the anterior cornu, where they end for the most part in arborization among its cells.

(To be continued.)

ORLEANS PARISH MEDICAL SOCIETY.

Meeting Held in New Orleans, La., July 22, 1899.

DIABETES MELLITUS AND COMPLICATIONS.

DR. P. L. CUSACHS related the case of a young white man suffering with a complication of diabetes mellitus, sclerosis of the liver and incipient pulmonary consolidation. Observations on the daily quantity of urine—up to 10½ pints—and on the contained sugar were read in detail. The treatment had consisted in the administration, successively, of pancreatic essence, guaiacol, aromatic sulphuric acid, arsenauro, etc. No treatment had had any beneficial effect, the patient growing gradually weaker. Dr. Cusachs suggested that the hepatic disease might be an etiologic factor in the case, interfering with the glycogenic function of that organ.

DR. H. B. GESSNER told of a case of diabetes mellitus in a stout colored woman of 60 years. The cure appeared to have been effected by the use of antipyrin, codein sulphate and arsenic, the latter in the form of Fowler's solution. The usual dietetic instructions had been given. Fluid extract of eugenia jambolana, endorsed by H. A. Hare in the treatment of diabetes mellitus had been administered at one time, but had been ill-borne by the patient's stomach. At the time when the patient was last seen, some three months ago, no sugar was found in the urine; there was complete relief from symptoms. Treatment had lasted two years.

DR. A. NELKIN thought it was jumping at conclusions to have a diagnosis of diabetes mellitus or polyuria associated with glycosuria. Likely these are the common symptoms of several diseases affecting the nervous system, the liver or the pancreas, and differing from each other as widely as cancer and tuberculosis, both of which cause wasting. He referred to glycosuria of alimentary and of alcoholic origin respectively, probably neither of them a true diabetic condition.

DR. F. A. LARNE thought it unwise to depend on polyuria and polydipsia as symptoms. Of three persons at present under his care for diabetes mellitus, not one has polydipsia, while but one has polyuria. As to the specific gravity of the urine, in his experience this had proved misleading, as he had found sugar in urine of as low a specific gravity as 1602.

ANCHYLOSTOMIASIS.

DR. C. HAMILTON TEBAULT, JR., presented a case convalescing from anchylostomiasis or tropical anemia. After quoting Patrick Manson on the disease, he detailed the case as follows: G. H., aged 15 years, of German extraction, was born in New Orleans, where he has always resided. His father died of cardiac disease; there is no family history bearing on his trouble. About 1½ years ago he began suffering with epigastric discomfort, loss of appetite and weakness, with paroxysmal diarrhea. He was treated in the Out-Clinics of the Charity Hospital for pernicious and for malarial anemia. When admitted to Dr. Tebault's service, the boy's anemia was marked; the lips, tongue, and conjunctivæ were very pale; there was edema of the hands, feet and lungs. The temperature ranged up to 101 F.; there was a hemic bruit at the base of the heart; the urine, of 1008 specific gravity, had no albumin in it. There was capricious appetite, with headache, vertigo and spots before the eyes. Diarrhea alternated with constipation. There was no emaciation.

Examination of the blood showed plasmodiæ; red blood-corpuscles, 2,500,000 to the c. mm. Examination of the feces revealed the presence of the ova of the anchylostoma duodenale. The patient then weighed 79 lbs.

Thymol was given in 10-grain doses three times daily on an empty stomach for two days; meantime alcohol was prohibited on account of the danger of its dissolving the thymol and thus producing toxic effects. At the end of the second day castor-oil was given; at the end of the fourth day, 3i of male fern was given, followed by dose of castor-oil. Numerous anchylostomata were expelled. The lad was then put on arsenauro and compound syrup of the hyposphites. His appetite improved, his headaches troubled him less. The red blood-corpuscles increased in number. The male fern was administered a second time. The result of the treatment has been that the weight rose to 85 lbs., the number of red blood-corpuscles to 5,540,000 per c. mm.; the mucous membranes regained their normal color, the temperature fell to normal, and the edema and cardiac symptoms disappeared.

"CALENTURA."

Dr. Tebault also discussed "Calentura," a fever observed in Cuba during his service there as an acting assistant-surgeon, U. S. A. This word, which appears to have a general meaning of "feverishness," is applied to a febrile attack of one paroxysm, beginning with a chill in the early morning or late at night. Sometimes there is only a sensation of chilliness. The temperature rises to 103 or 104 degrees, falling on the fourth or fifth day, in mild cases as early as the second day. The pulse is relatively slow. Jaundice is unusual. Headache, capillary stasis and pain in the calf of the leg are present, as in yellow fever. The liver is large, the spleen large and tender. Gastric symptoms are frequently absent altogether, and, when present, are of but short duration. Instead of the acute prostration of yellow fever there is a debility which lasts for weeks, and which, in foreigners, may not disappear until some time has been spent away from Cuba, in a more healthful country. Albuminuria is absent.

In the rare cases of death, for the mortality is practically *nil*, the appearance of the organs is such as would be expected in death from congestive chill.

There seems to be no connection between yellow fever and calentura; neither protects against the other; the latter is a recurring disease, usually attacking Cubans at least once a year, and sometimes as often as three or four times a year. Blood examination in the cases seen by the Doctor revealed the presence of plasmodia; but these are present in all cases of disease in Santiago.

The treatment consisted in the administration of quinin and strychnin, with liquid diet; turpentin enemata were used to keep the bowels open.

DR. T. S. DABNEY called attention to the fact that anchylostomiasis is not confined to tropical countries, having been observed in Switzerland. As for calentura, he had come in contact with a disease of that name in South America; this had proved to be simply intermittent malarial fever, yielding promptly to quinin.

DR. W. M. PERKINS, who had also observed calentura in Cuba, during the late war, was of the opinion that it is a malarial disease; the natives treat it with quinin.

PURE FOOD.

DRS. J. A. STORCK and L. KOHNKE discussed pure food, the former from a chemical, the latter from a legislative standpoint; attention was called both to the deliberate adulteration of food products with noxious substances, and to the use of such chemicals for purposes of preservation.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance $5.00
Foreign Postage 2.00
Single Copies . . . . . 10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those now members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, AUGUST 26, 1899.

UNSOLVED PROBLEMS AND FUTURE WORK IN TUBERCULOSIS.

Great as is the progress of the last ten to fifteen years, in the study of tuberculosis, there yet remain many and weighty problems to be solved before we can hope for more decided results in our efforts at staying the ravages of this widespread disease. In a recent lecture[1] Dr. E. L. Trudeau of Saranac Lake, N. Y., presents the aspect of some of these questions relating to tuberculosis in a manner which surely is helpful to all who are directly or even indirectly interested in this matter.

He points out that more knowledge of the conditions which lead to variations in the manifestations of the disease is necessary. We are in the habit of explaining these differences as due to variations in virulence of the germ and in the resisting power of the tissues. But upon what factors does variation in virulence depend? And wherein lies predisposition, be it individual or racial, inherited or acquired? Among the various channels of access to the body more attention should be given to adenoid growths in the nasal fossæ, as this part of the respiratory tract is probably a more frequent channel of invasion than is suspected.

Among the problems in pathology, Trudeau emphasizes the need of thorough study of the chemical changes which occur in tuberculosis in the digestive secretions, and of the anemia in this disease. The secret of the nature of the changes which result in cure in peritoneal tuberculosis after laparotomy has not been solved. Perhaps much light could be thrown on some of the issues connected with acquired immunity if we could learn the mechanism whereby the bacilli are made innocuous. What is the exact significance of the appearance of bacilli in the milk, urine or semen? Are they excreted or is there always active tuberculosis in the organs when bacilli are found in the products? The botanic position and the possible occurrence of the tubercle germ in nature are also among the problems suggested by Trudeau when he discusses the nature of this microphyte and asks, is it a bacillus at all? The relation of the germ of tuberculosis to the ray fungi, the grass and dung bacilli of Moeller and the acid-proof bacilli described in butter is now one of the questions that invite investigation.

In respect to prophylaxis, some way of determining to what extent there is danger in the spraying of bacilli in fine particles of mucus and saliva by the act of coughing and talking, as demonstrated by Flügge's recent work, would be of great value to preventive medicine. It has been shown at Saranac Lake that the hands of patients using handkerchiefs may, in the majority of cases, be the carriers of unsuspected bacilli. "Practical suggestions as to the education of the masses in regard to the sources of infection, and studies which will give us more light on the best and most practical methods to guard against them would be of inestimable value." The value as a prophylactic measure of state and municipal sanatoria and special hospitals in educating patients and removing from crowded communities individuals who are a constant source of danger, needs but to be mentioned in order to be appreciated. Hence, all facts in regard to the management and construction of such institutions are greatly desirable.

And then come the problems of bacteriology and physiologic chemistry relating to methods of exaltation and attenuation of virulence, of obtaining toxin of fixed strength, and to the study of the various chemical substances elaborated by the germs of tuberculosis. The probable value for future research of the collodion sac method of cultivating microbes, previously mentioned editorially in the JOURNAL, is pointed out. Collodion sacs partly filled with fluid media and inoculated with germs are inserted into the abdominal cavity of animals. The walls of the sac allow a slow interchange between the fluid in their interior and the fluids of the animal incubator, the bacteria are protected against the cells, toxic substances are slowly disseminated into the body of the animal, but the germs are not disseminated. The influence on the germs of cultivation under such circumstances opens an interesting field of study, as also the effects of freshly and continuously elaborated toxins on the animal organism; new methods of producing immunity and obtaining antitoxic substances suggest themselves. Already Nocard has succeeded in making the human tubercle germ pathogenic for fowls, by cultivation in collodion sacs inserted into the peritoneal cavity of chickens, and Vincent, in transforming saprophytic bacteria into virulent, by repeated passages through animals, in collodion sacs.

[1] Bull. Johns Hopkins Hospital. 1899, No. 10, p. 121; JOURNAL, August 19, p. 470, ¶ 7.

The necessity of bringing to light the true facts as to the exact value, the limitations and possible objections to the use of the tuberculin reaction in diagnosis is brought out forcibly. It is pointed out that there is no evidence of this test being dangerous or tending to aggravate the disease. Virchow's statement that tuberculin-treated patients revealed many new tuberculous foci at a distance from the old lesions contains no proof that the bacilli are scattered through the system as the result of the injections. Broden's study of experimental, peritoneal tuberculosis of dogs treated by tuberculin injections shows the rapid development in larger numbers of nodules containing much fewer and more degenerated bacilli than in the control animals.

Trudeau also lays stress upon the use of X-rays in the diagnosis of incipient tuberculosis; the height of the excursion of the diaphragm and the presence of a light shadow over the suspected area in the lung may help greatly toward reaching a correct conclusion even before unmistakable symptoms are present.

Finally the problems connected with the treatment and especially with the production of an efficient antitoxic serum are considered. In opposition to the conservative view which sees no hope that artificial immunity against tuberculosis can ever be produced especially because the natural history of tuberculosis shows that recovery from a tuberculous process does not afford protection against future attacks, Trudeau finds considerable evidence in his own work as well as in the result of others in favor of the claim that the resistance of the body to virulent tuberculosis can be greatly increased by preventive inoculation. Failing to obtain appreciable results by inoculation of cultural products and of dead bacilli, he, like de Schweinitz, has of late used living germs attenuated by various methods. Cultures of mammalian bacilli attenuated by prolonged growth on artificial media have been found by both de Schweinitz and Trudeau to protect guinea-pigs in a marked degree. By this method of attenuation the biologic characteristics of the germs are least altered, the organisms merely losing those attributes which are not called into use, in this case the specific pathogenic powers. In 36 control animals, the average life was 57.2 days, in 66 vaccinated animals it was 154.3 days. As yet, however, complete recovery has not been secured, although vaccinated pigs have lived for three years in good condition, ultimately dying of chronic tuberculosis. This may mean that the disease is not auto-inoculable and that an animal with a very chronic experimental tuberculosis is not susceptible to reinoculation with a more virulent material.

Here then have been indicated problems enough of great practical and scientific importance, inviting the efforts of the enthusiastic investigator and the patient student, efforts which merit the support of the state and private munificence.

IT IS reported that anterior poliomyelitis prevails in epidemic form in Poughkeepsie, N. Y.

WEIGHT AND NUMBER OF THE FUNCTIONATING CORTICAL CELLS.

In 1872 Meynert estimated the number of nerve-cells of the cortex of the convex surface of the cerebral hemispheres in round numbers at 612,000,000. In 1895 Donaldson, taking Meynert's calculation as a starting-point, estimated the total of cortical cells at 1,200,000,000 and in the whole nervous system at 3,000,000,000. In 1895 also, Hammarberg published a very minute and careful study of the size and arrangement of the nerve-cells in the human cortex, which has been already noticed in the JOURNAL. He did not, however, apparently carry out his calculations to the estimation of the total number of cells in the cortex of the brain, and it remained for a woman, Miss Helen Bradford Thompson, to take up the subject and apply Hammarberg's methods to solving the question. Her paper appeared in the June issue of the *Journal of Comparative Neurology*, and by adopting the data as to dimensions and arrangement of nerve-cells given by the Swedish investigator, supplying as far as possible their omissions and applying them in detail to all the separate cortical regions, she comes to the conclusion that they indicate the total number of cells in the cortex to be the astonishing figure of 9,200,000,000, or nearly eight times the estimate of Donaldson.

Using the same methods of measurements of cells for estimating their proportion of the volume of the cortex, Miss Thompson concludes that the grand total of all these 9,200,000,000 cells amounts to only 1.37 per cent. of the substance of the peripheral gray matter of the hemispheres, a conclusion hardly less remarkable than the other. Inasmuch, however, as Hammarberg's method—alcohol hardening followed by methylene blue—did not bring out the dendritic processes, this estimate is possibly too low, and Donaldson, in his comments on Miss Thompson's work, allows 0.63 per cent. for these, making a total of 2 per cent. in round figures, including in this also the terminals of the axones ending about the dendrons. The figure is small enough with the addition and is, in a manner, still a shock to the average preconceptions on this point. The article still gives another calculation that is perhaps still more directly suggestive in relation to the function of these cells. Using the same data to compute the number of giant cells, usually considered as distinctly motor and located in the accepted motor regions of the cortex, she finds them to number 159,690. Bloeq and Ozanoff had already determined the number of pyramidal fibers of one side of the body to be 79,111. Doubling this we have 158,222, a number very nearly corresponding to the number of giant cells, according to Miss Thompson's calculation. The most of these are found in the upper and mesial portions of the anterior central gyrus containing the centers for the trunk and limbs. The significance of the figures is obvious. The cellular origin of the motor fibers for the head and neck, she suggests, not being provided for in these calculations, must be looked for elsewhere than in

the giant cells, probably in the large pyramidal cells of the fifth layer in the lower portions of the motor region, where are situated the head and neck centers.

Immediately following Miss Thompson's paper is one by Prof. H. H. Donaldson, where he discusses the significance of this small total volume of the nerve-cell bodies in the cerebral cortex. Hammarberg has shown that a comparatively slight deviation from the normal development of these cell bodies suffices to impair the intellectual faculties to the extent of producing imbecility. Donaldson's estimate of the average weight of the cortex is 658 grams, which seems certainly liberal enough, and 2 per cent. of this would give for the cell bodies and their dendrons only a total weight of a little over 13 grams, which leaves only a very small margin for changes of brain weight dependent on alteration or deficiencies of these bodies. The real differences, nevertheless, are considerable, amounting to as much as 134 grams between the average brain weight of eminent men and that of the ordinary individual (1360 grams), and 142 grams between the average male and female brains. The mean difference between the brain weight of the prime of life and that of old age, 55 grams, is more than four times that of the total of cortical brain cells. Admitting the possibility of a certain range of variation in the number and complexity of the neurons in different individuals, the excessive variation will still have to be accounted for. Donaldson finds the most probable explanation in an increase in the axone portion of the neurons and, therefore, practically insignificant for any physiologic complexity of the cortex. Whether this last inference is entirely justifiable may be questioned, perhaps, as the abundance and development of commissural connections has no unimportant part; it is probable that in cerebration, any greater bulk and weight of the axone mass may be taken as possibly pointing directly to such a development, which in turn could hardly fail to increase the functional complexity of the receiving and transmitting cortical mechanisms—in other words, their physiologic complexity. This fact is undoubtedly recognized by Professor Donaldson, though he fails to make it prominent.

There are some other points noted in his paper, such as the fact that the weight of the child's brain is nearly as great at 6 or 7 years as at maturity, which Donaldson is also inclined to account for by an increase of medullary substance, and the lack of difference between the hemispheres, notwithstanding the functional predominance of one over the other. In the case of the child, we will have to assume a provision made for future development, as the physiologic complexity at that age can not be assumed to be as complete as at maturity. There must be a potential complexity there, so to speak, and this may be provided for to some extent anatomically. As to the hemispheres it is easy enough to assume that the actual anatomic differences corresponding to the functional ones need not be so great as to materially affect brain weight.

The two articles, while giving new data as to the anatomy of the cerebrum, are especially suggestive in many ways and deserve more attention than they have apparently as yet received from the medical press.

THE DEPARTMENT OF PUBLIC HEALTH.

"There is to-day in the United States a striking need for a legislative committee so constituted that by virtue of its representative character it can speak for and in the name of the great medical profession." This vigorous statement by Dr. Charles A. L. Reed, in his London letter published in the JOURNAL, August 19, is deserving of especial attention from the members of the ASSOCIATION at the present time. The remark was made apropos of Dr. Reed's observation of the powerful influence wielded by the Council of the British Medical Association, on English legislation and state medicine. For years all the thoughtful men in our American profession have seen and said that, until it is thoroughly organized, the profession can not adequately exert that power for good which is inherent in its possession of knowledge, that can and must be applied for the general welfare of the nation. The machinery for the formation of a powerful representative committee was set in motion at the Columbus meeting of the ASSOCIATION, by the unanimous adoption of the resolutions offered by Dr. L. B. Tuckerman from the Ohio State Medical Society, which provide for the appointment by the ASSOCIATION of a special committee on national legislation, of three members, one of whom is to be the member of the Board of Trustees resident in the District of Columbia, and the others resident in Philadelphia and Baltimore. The resolutions further authorize this committee to invite, in the name of the ASSOCIATION, the army, navy and marine-hospital medical services, and each state medical society, to send one delegate each to a conference to be held at Washington, D. C., at such time as the committee may determine. It is further provided that this conference shall consider medical and sanitary legislation now pending. Also at the Columbus meeting the Committee on Public Health, of which Dr. U. O. B. Wingate is chairman, was ordered to continue its work in furthering the passage of the bill to create a department of public health. These actions of the ASSOCIATION received, previous to their unanimous adoption, the recommendation of both the business committee and the Board of Trustees, and funds were appropriated for carrying them into effect.

These committees are fully prepared to carry out the will of the ASSOCIATION and they must have the undivided moral support of the members. It is not too soon now to consider the campaign which is to be waged in Congress this winter for the passage of the Spooner bill, establishing a department of public health. The conference of representatives of the state societies, to be called by the ASSOCIATION'S Committee on National Legislation, will no doubt be held during the session of Congress, and by its presence and action will exert a

great influence on that body. But, as Dr. Wingate pointed out in his report, the chief obstacle so far met in the attempt to secure the passage of this law has been the lack of information on the part of members of Congress concerning the importance to the nation of the proposed legislation. During the three autumn months now intervening before Congress assembles will occur the most favorable opportunity for the profession to individually and collectively educate the members on these points. Many members of this Congress are new and know little or nothing of previous efforts of the profession, or of the arguments it has advanced. Physicians everywhere should see and write to their nearest senators and representatives strongly urging on them the facts and reasons that imperatively demand the institution of a department of public health, with a cabinet officer at its head. The new problems now arising in connection with tropical diseases, as well as many old ones, plainly show that such a department as the ASSOCIATION asks would now be of inestimable value to the other departments and to a still greater degree to the general public. Literature urging these facts should now be sent to congressmen through the personal medium of their constituents, thus effectively preparing the way for the great contest to be waged this winter. Let every member of the ASSOCIATION, and indeed every physician, now get to work, for there must be no question of the profession's success in its efforts at the coming Congress.

ASSOCIATED POLIENCEPHALITIS AND POLIOMYELITIS.

Probably no influence is more potent in the domain of the etiology of disease than the various toxic processes. Closely related with these, and of scarcely less importance are the infectious processes. The latter are necessarily of extrinsic origin; the former may be also intrinsic. Infectious processes arise necessarily from the activity of micro-organisms, and these are invariably derived from without. Poisonous substances, however, not only may be derived from like sources, but they may also be generated within the body—for instance, on the one hand, alcohol, lead, mercury, opium, strychnin, etc., and on the other hand the toxic substances responsible for the manifestations of uremia, of diabetic coma, etc. Intoxication may further result through the activity of substances generated by infecting bacteria; from failure in the activity of certain glandular organs, as of the thyroid in myxedema, of the adrenals in Addison's disease, of the pituitary in acromegaly, of the pancreas in diabetes; and of excessive glandular activity, as of the thyroid in exophthalmic goiter. Many of the poisonous substances under consideration, while capable of widespread injury, appear to possess better or less defined affinities for certain special structures or organs, and of all of these the nervous system seems to be the most susceptible. Apart from traumatism, neoplasm, aneurysm, vascular occlusion and hemorrhage, hyperplastic processes and other mechanical conditions, almost all diseases of the nervous system may be attributed to intoxication or infection. Recent additions to our knowledge of the finer histologic structure of the nervous system have done much to establish the connection between pathologic processes and clinical manifestations, and to confirm certain analogies between the brain and the spinal cord, each of which is endowed with certain independent functions.

The foregoing considerations help us to understand not only how different parts of the same nervous tract, but also how various disconnected and even widely separated portions of the nervous system may suffer simultaneously in consequence of the activity of a single morbid process. Thus we may have, on the one hand, disease of the cells of the anterior horns of the spinal cord or of those of the nuclei in the medulla and also of the related peripheral motor nerves; and on the other hand, the disseminated lesions of insular encephalitis and myelitis, or of insular cerebrospinal sclerosis, or simultaneous inflammation or degeneration of the gray matter of the brain and the spinal cord. An interesting illustration of the last-named association has recently been reported by Williams[1]. The patient was a girl, 11 years old, without signs of congenital syphilis, who had been paralyzed for six years. At the age of 5, while in apparently good health and in the absence of any history of any infectious disease, the child, on coming home from school one day complained of severe pain in the head, over the left temporal region. Later, a convulsion took place, and subsequently the face was drawn to the left, while speech was lost and the right upper and lower extremities were paralyzed. The facial palsy gradually improved and the power of speech returned in the course of about fourteen months. The child attended school, but learned slowly and was exceedingly forgetful. The right arm was found spastic, with the elbow more or less flexed, and the fingers flexed or extended and rigid, all movements being slow, incomplete and usually tremulous. The circumference of the right arm was one-fourth inch greater than that of the left, probably in consequence of the constant choreiform movements. The electric reactions were normal. The heart and lungs were healthy. The circumference of the right leg was one inch less than that of the left. Pes cavus existed and for its relief tenotomy had been performed. The electric reaction of the flexors seemed normal, but the peronei yielded reaction of degeneration. The knee-jerks were present. The unilateral distribution of the symptoms, the involvement of speech and of the facial muscles, the absence of degenerative electric reaction and the preservation of the reflexes in the affected upper extremity point to a lesion of the cerebral gray matter, while the wasting of the lower extremity with reaction of degeneration indicated a lesion of the spinal gray matter—a polioencephalitis.

DR. A. DUVAL ATKINSON, Baltimore, Md., has been elected lecturer on diseases of children at the Women's Medical College.

[1] Lancet, July 1, 1899, p. 22.

THE REACTION OF DEFENSE.

A French professor, M. Soulier of Lyons, explains the Widal reaction in typhoid as a defensive act of the organism, an illustration of the old *vis medicatrix naturæ*, instead of it being merely an indication of an infective process. It is, according to him, only one example of the action of a defensive power of the system, others of the same general nature being the phenomenon of Pfeiffer, the alkalinity of the serum, leucocytosis assisting phagocytosis, the appearance of bile coloring matters in the stool and urine, the diazo-reaction, etc., all of which point to a special call for some element needed in the organic defense against infection and disease. His ideas as to the vital reaction against disease are not so altogether new, but his suggestion of possible therapeutic indications in these phenomena hitherto reckoned as chiefly or solely of diagnostic value, has, in it, some element of novelty.

REFORM OF THE PRESS.

In the state of Colorado where the great and good Governor Thomas decides questions of medical reform, and where, according to Dr. Rothwell, he is backed in this by an almost united press, there would seem to be need of something above the mere state law to take a hand. According to the *Rocky Mountain Druggist*, editorially quoted in the *Colorado Medical Journal*, the holiday editions of Denver's great dailies are a "sizzling slough of nauseating obscenity," and "the lost manhood" department of a daily paper is its most prolific source of revenue. The "'depraved womanhood' department is probably not far behind." The publisher of a daily paper in the wicked city of Chicago conducted his journal apparently on the plan of the Denver dailies, and had, as a result, to retire for a time to the walled city in Joliet to meditate over his misdeeds. It would be well if some public-spirited citizen of Colorado would call the attention of the United States Courts to these "sizzling sloughs." It would be on a line of medical reform that Governor Thomas could not undo.

AN UNREASONABLE HEALTH OFFICIAL.

A health officer of Detroit is reported as having refused to permit the remains of a person who had died of consumption to be taken into church for the funeral. We do not know all the circumstances, but, as reported, it certainly was a case of overdoing on the part of, to all appearances, an inexcusably ignorant official. If instead of a dead consumptive in a coffin, it had been a living coughing one, his procedure would have been more rational, though even then hardly justifiable. In the present general scare about tuberculosis there is very much that is altogether unreasonable, and health officials and physicians should be among the last to unduly encourage it. We are constantly increasing our list of contagious diseases, but the mortality from them will not be appreciably lessened by exaggerating their dangers. Fear is a very appreciable factor in increasing mortality, and serious mischief may be done by its encouragement. As our knowledge of germs increases, we are constantly finding them in places where they were before unsuspected, and thus giving chances for new fears. If the Detroit official's ideas hold sway, we may yet have to limit church funerals to cases of violent death or those from natural decay of old age.

THE EVOLUTION OF A TESTIMONIAL.

Viewing in perspective the history of the testimonial, there may be observed in its character a regular, logical development. This evolution resembles closely that of Nature, being steadily from the simple to the more complex. Primitively it consisted of a few words from the indulgent physician as to the value of the preparation, sometimes conscientiously given, sometimes without any knowledge, and sometimes perhaps against his judgment. There then came the period of corruption in which the need of the manufacturer and the need of the testimonial writer embraced like long-lost brothers, the first wanting praise, the second no less avid of money. The pathologic pathologist and the sick clinician wrote articles which were marvels of unscience, chronicling myriads of miracles in such stupid and hypereulogistic terms that the trick became manifest even to the most unwary, and the second dynasty suddenly ended. We seem to be in the third stage, where the genuinely scientific, well-written article is brought ready-made to the physician, who forwards it to the editor as an original contribution. This poor man is sorely puzzled and full of wonder as to where the physician who sends the article obtained the excellent laboratory experience evident in his work, and where on earth he learned the polished literary technic contradicted by every line of the personal letter he writes. The fourth stage that threatens, who may predict its garb?

REFORM IN THE ENGLISH GENERAL MEDICAL COUNCIL.

Dr. Horsley's—we call him Doctor on general principles—report to the registered practitioners of England and Wales, in the *British Medical Jornal*, August 5, is in some respects interesting reading. It states facts that are not specially creditable to the president and some other officials of the General Medical Council, a body which it would seem from this document has been altogether too much interested in the preservation of abuses instead of reforming them. Appreciating the fact that Dr. Horsely would be a disturbing element in this state of affairs, an embargo was laid by the president on him or any other member having access to documents, and this was supported by a misleading opinion of the legal adviser, and the council therefore supported the presiding officer. This prevented him from discovering and thwarting the scandalous prosecution of Dr. Hunter, which he shows was carried out by the penal committee and the lawyers without authorization from the Council as a whole. The result was a judgment which he characterizes as "a farrago of ignorance and rubbish" that has only had the effect of "rendering the use of medical titles and especially of all university degrees by medical practitioners most unsafe." He also shows that he has been able to call to account the Penal Cases Committee and to discover that the legal counsel who had posed as official representatives had really never been so authorized. The body evidently needed the labors of a reformer and it is fortunate in having obtained so able a one. The report is full of suggestive statements that indicate rather than fully state the condition

of affairs that has heretofore existed. Our interest in the matter is only a general one, but we share the satisfaction that every well-wisher of the profession must feel when he sees wrongs being righted and time-honored abuses overthrown.

THE DISEASE OF INEBRIETY.

Of late years the opinion that inebriety is a disease has been so largely put forward that it has, with many, quite obscured the fact that it is also a vice. In common usage the term covers every form and degree of excess in the use of liquor, from periodic dipsomania—which it may be said does not cover every form of occasional spree, as some would have it—to the common besotted habitual drunkard. It, like charity, certainly covers a multitude of sins, and it would be well for us to keep in mind this fact. Only in a small proportion of cases is drunkenness due originally to a disease properly so called. There are very few drunkards who have been irresistibly impelled to their depraved appetites, and there can not be said to be such an overwhelming majority of them who could not reform were they willing to take themselves out of the reach of temptation. They are very largely the victims of vicious self-indulgence, and this fact should not be forgotten or obscured by a theory that they are subjects of disease, which would naturally imply that they were also innocent victims. Many are, it is true, handicapped by heredity or environment, and to that extent they deserve some sympathy, but it should be intelligent sympathy, not the kind that ignores facts and perverts conduct. One of the worst effects of this popular notion that inebriety is a disease is its encouragement to quackery. The numerous "gold" and other cures are the direct results of this notion, and their too often ultimately damaging effects are one of its consequences. It would be well for medical societies that are called on sometimes to endorse the views of the pathologic nature of inebriety to bear in mind these aspects of the question.

JUVENILE SCROFULA AND PHTHISIS.

According to *Pediatrics*, August 1, the opinion that tuberculosis in some form or other is an almost universal affection, is getting to be general. It refers to a recent research of Volland who, on examining 2500 school children, found that between the ages of 7 and 9 no less than 96 per cent. had indolent, multiple, engorged cervical glands, which he holds to be a purely tuberculous manifestation. The percentage decreases each year until in adult life the number of individuals who present the symptom is comparatively small. That is to say, the vast majority of children are infected with tuberculosis and present its lesions in a modified form. It is not surprising, therefore, that some of the weaker ones fail to escape it in later life. This goes further than the observation of Kelsch, who found evidence of "latent" tuberculosis in two-fifths of young persons. Blos of Heidelberg, on the strength of these findings of Volland and others, according to *Pediatrics*, scouts at the idea of the diffusion of tuberculosis by inhaling infected air and drinking infected milk, and returns to the old view that gland scrofula almost always precede tuberculosis, and that one who develops consumption is self-infected from his own tissues. The editor of *Pediatrics* judges from the agreement of several distinguished pediatrists at the Berlin Tuberculosis Congress, that the best and most certain mode of arresting the spread of the disease would be the treatment of scrofulous children in seaside sanatoria, that they were inclined toward the same views as Blos and Volland. His suggestion that the profession immediately set to work to confirm or disprove these views is one worthy of attention. Its practical bearing on the whole question of tuberculosis is obvious.

IS THE BIRTH-RATE IN THE UNITED STATES DECREASING?

What may serve as food for proper thought, especially for its bearing on the subject of overpopulation in the United States, is that of the birth-rate throughout the land. Aside from its medical status, this question is one which may engage the sober thoughts of wiser heads who come to deal with political economy as it applies to our country. In proving the subject of the birth-rate we have to fall back on that notorious factor of inaccuracy known as "statistics." In a recent editorial in one of our daily papers[1], a writer endeavors to prove that the birth-rate in the United States is gradually decreasing. This statement is backed by the statistics as obtained from the records of H. T. Newcomb, a statistician in the agricultural department at Washington. First of all it is believed that the population of the United States—not including colonies—in the year 1900 will be 74,480,860, based on the different state censuses. The increase for the past decade has been 18.94 per cent., which is below that of any previous decade. If the population had increased in the past decade in the same ratio as formerly, the population in 1900 would be 77,680,000, yet it is seen that the population will fall short of this number by 4,200,000. Of this loss it is estimated that 1,622,480 may be allowed for decrease of immigration and to children which might be born to them. However, there remains a loss of from 2,000,000 to 2,500,000 in the population if the increase in population is in the same ratio as in that period from 1880 to 1890. This loss of 2,000,000 to 2,500,000 is believed to be due to a decreased birth-rate, in both the negroes and whites. The writer states that in 1890 there were 1,800,000 less children under the age of 10 years than were expected, judging from the statistics of 1880, and it is believed that this decade will show even greater loss. This decennial loss has gone on for the past 100 years. It is claimed that whereas the native white population a century ago was 35.10 per cent. from 1790 to 1800, from 1890 to 1900 Mr. Newcomb claims that it will probably be only 25 per cent. Statistics show that increase for our total population was 30.08 per cent. from 1870 to 1880; 24 per cent. from 1880 to 1890, while it is believed this decade will only show an increase of 18.94 per cent. It is further pointed out that should this decrease in the birth-rate keep up, within twenty years the increase in this country will be only about that of European countries like England and Germany.

[1] Philadelphia Press.

Medical News.

By the will of the late John Gillespie of Philadelphia the sum of $10,000 has been left the Methodist Episcopal Hospital of that city.

Dr. William Porter has been elected to the chair of physical diagnosis and diseases of the chest in the Beaumont Medical College, St. Louis.

By the recent death of Mr. Zephirin Chapleau, Quebec, Notre Dame Hospital receives $10,000, the Hotel Dieu $3,864 and the Sisters of Providence $6,304.

Owing to the appalling loss of life from the storm in Porto Rico, the sanitary condition of the island is thought to be in a dangerous condition and a serious epidemic of disease is feared.

When President Faure was in St. Petersburg, in 1897, he laid the corner-stone of a French hospital to be erected at the expense of the French Government. It is now practically completed and is to be named after the Countess Montebello, the wife of the present French ambassador, as it in great measure owes its existence to her efforts.

Professor Bandissini of Marburg has received simultaneous calls to Berlin and Bonn. . . P. Kretschmer has accepted a call to Vienna. . . B. Kader, privatdocent at Breslau, has been invited to the chair of surgery at Cracow. . . Dr. E. Bennecke has taken Hildebrand's place at the Charité, Berlin.

An American firm wants the land on which the San Francisco Woman's Hospital at Havana, Cuba, is located, and has offered to build a new model hospital in another part of town and pay $10,000 in cash in exchange for it. *El Progreso Medico* remarks that it is "high time the poor women of the city had a decent hygienic and comfortable hospital."

L' Hôpital International, just opened at Paris, rue de Vaugirard 180, by Bilhaut and others, is a small private and independent policlinic and hospital "patterned after the small American hospitals," patients isolated or at most three in a room, the remuneration proportional to their means. It is practically the successor of the old Clinique Francaise and Péan's polyclinique.

A clipping states that the increase in the number of women students at German universities during the last few years has been remarkable. In 1896 there were only 177 at the ten leading universities, but at the beginning of the present year the number had risen to 414. Most of the women take courses in philology or philosophy. Only 16 have studied medicine, 6 theology, and 6 law in the last four years.

The N. Y. State Charities Aid Association has acknowledged its approval of the proposed plan for restricting the appropriation of public funds for the support of private charitable institutions. At present New York City gives over $3,000,000 annuallly to 282 of these institutions, and, as referred to before in the Journal, the Association recommends that the amount thus appropriated be gradually reduced, and that no institution receive funds until after investigation by a city official.

The French Congress of Internal Medicine, held at Lille the first of August, introduced some noteworthy innovations. The addresses which had been printed and distributed beforehand, were not read, and the *rapporteurs* did not take the floor until all the objections had been raised, a vast saving of time and patience. There was also a fine stereopticon for general use and a couple of dark chambers for members inclined to photography.

Experiments, having in view the adoption of a more scientific system than that at present employed in feeding the insane in the New York State hospitals are now being made in that state by order of the State Commission on Lunacy, under the direction of Prof. H. D. Atwater. Prof. Atwater reports that with a dietary representing the best modern opinion on the subject, there can be not only better results as regards the physical condition of the patients, but very considerable saving in the matter of expense.

Another victory was scored by the Illinois State Board of Health, August 17, when Joseph Skalla, 571 West Eighteenth Street, Chicago, was fined $100 and costs for violating the medical practice act. The prosecution charged Skalla with making and selling medicinal remedies and treating the sick in violation of the state law. It also showed that Skalla was not a regularly licensed physician, and on his testimony the justice imposed the regulation fine for the first offense. The case was not appealed.

Numerous severe and puzzling cases of intoxication in Italy, especially among the tourists in hotels and boarding houses, have been traced to the custom of preserving the carcasses of the small birds which are killed in numbers for the feather trade, as they alight during their annual migrations. Those intended for the food market are supposed to be kept separate, but mistakes have evidently occurred, and the necessity of refraining from the toothsome "uccellini," as the cooked birds are called, should be impressed on all starting for Italy.

According to the *British Medical Journal* of August 12, the plague continues to spread in Poona, India, to an alarming extent. On July 29 and 30, 360 cases occurred there, and 317 deaths. The plague has also reappeared in epidemic form in Bangalore. In Egypt, during the week ending August 2, six cases of plague appeared in Alexandria. Since the beginning of the outbreak in Egypt 37 cases have proven fatal and 39 have recovered, while four cases are still under treatment. Hongkong shows a decrease, there being but 30 cases and 30 deaths officially reported for last week.

During the past two weeks the Chicago coroner has been busily engaged in examining into the demise of several members of the Dowie flock. The first victim was a babe of 9 months, which expired August 16, without medical attendance. The death certificate was given by the coroner as pulmonary and intestinal tuberculosis. Mrs. Augusta Schlater died August 18, after a long illness during which she received treatment at Zion. She was sent to her home when it became apparent that she was unable to recover, and died within twenty-four hours. The third victim was a young woman of 23 years who came to Chicago from Iowa, and who died at Zion three days later.

From the *Chicago Times-Herald*, August 21, we learn that Dr. Nicholas Senn, who arrived in San Francisco on his return from the Hawaiian Islands, August 15, while in the Islands met with a slight accident during a hunting trip in the mountains of Molokai. The Doctor placed his gun against a rock and was trying to get his horse alongside, to take his gun, when the animal balked and then rolled completely over. In the tangle Dr. Senn was somewhat bruised and had a thumb mashed. Dr. D. R. Brower, Chicago, who accompanied Dr. Senn, while much interested in watching the skinning of a peacock after the hunt, and not noticing his proximity to the edge of the veranda, lost his balance, fell backward down a

flight of steps, turned three somersaults and had two fingers dislocated besides receiving several bruises.

DAWSON CITY continues to be very good in point of health. A letter last week from Dr. J. N. E. Brown, formerly secretary of the Ontario Medical Association, now private secretary to Governor Ogilvie, states that thus far there has been no outbreak of typhoid. The sanitation of the town has been greatly improved of late, but withal the people are anxiously looking forward to August and September and hope to at least escape with a moderate epidemic this year. Dr. Brown is at present spending his holidays 450 miles up the river, north of Dawson.

AN UNFORTUNATE accident occurred in St. Michael's Hospital, Toronto, a short time ago. This Hospital is presided over by the Sisters of St. Joseph, and by mistake a young lady who had been but recently operated on by one of the leading surgeons, had a solution of carbolic acid administered to her instead of a purgative draught. She died; and now the father of the deceased has instituted two suits, in each case for unstated damages, one against the surgeon for, as the plaintiff alleges, performing an unauthorized operation, and the other against the Sisters of St. Joseph.

THE RECENT tuberculosis congress appropriated $800 to be awarded as a prize for the best or the two best works on "Tuberculosis as a Folk-Disease, and the Struggle Against it." They must be written in popular style, for general distribution, not be longer than three to five printed sheets, and each have a motto. They are to be sent to Prof. B. Fraenkel, 4 Bellevue-Strasse, Berlin, before Dec. 4, 1899. The work obtaining the prize becomes the property of the central committee. The judges are v. Leyden, several other professors and army officers and the Duke of Ratibor.

THE pure food department of Pennsylvania reports that during the past year there has been sold in the United States 87,000,000 pounds of oleomargarin, over four times as much as was sold in 1888. As a result of the large increase in the manufacture of this product it is also stated that there may be a falling off in cows numbering 4,309,000, worth in the aggregate $12,927,000. Whether this mixture of lard, tallow and coloring material leads to more harm than pure butter must be solved by future generations. If cows are to be displaced by artificial foods, the question of solving bovine tuberculosis is near at hand.

SWIFT retribution has befallen the assassin of Dr. Bondi (See JOURNAL, July 22, p. 235), as within a month of the crime he was sentenced to thirty days' imprisonment, which is after all somewhat of a nominal sentence, as the man is a consumptive who had been in the hospital and applied for readmission. Dr. Bondi told him he must first obtain the necessary permit from the city authorities, which incensed him to the extent that he waylaid and stabbed the Doctor with a long nail, a couple of days later. The lay press is roused to demand the isolation of tuberculous and other degenerates before they commit crimes, instead of waiting till afterward. One of the nurses in the hospital was killed in 1894 by a tuberculous patient, who it seems was a friend of this assassin.

A GERMAN doctor now residing in Buffalo, Dr. Max Breuer, has recently been decorated with the cross of the Legion of Honor by the French Government, says *Prog. Med.*, August 5. It seems that a young French sailor on an oil ship from Rouen to Philadelphia had his arm crushed and gangrene appeared, with no medical assistance on board. An English ship passed without paying attention to the signal of distress the captain raised, but the *Russia* of the Hamburg line hove to, although forbidden to approach within a certain distance of an oil ship. To the signal for a surgeon, the *Russia's* medical officer, Dr. Breuer, 28 years of age, responded with eight volunteers to man the boat in the heavy sea, amputated the arm and saved the sailor. When offered money for his services he replied: "the danger my men and I are facing at this moment can not be paid with money."

BEFORE the medical section of the National Fraternal Congress, held in Chicago, August 21, papers were read by Drs. J. W. Grosvenor of Buffalo, N. Y.; J. T. Craig, Kansas City, Mo.; C. S. Chase, Waterloo, Iowa; O. Millard, Flint, Mich.; S. T. McDermith, Denver, Colo.; C. A. McCollum, St. Paul, Minn.; and A. L. Craig, Chicago. The medical section is composed of the medical examiners in chief of the various fraternal orders. Dr. J. H. Christian of Baltimore presided and delivered an opening address. The following committees were appointed: On statistics of tuberculosis, to report at the congress of next year, Drs. C. A. McCollum, R. E. Moss and J. W. Grosvenor; on statistics of the height and weight of at least 100,000 applicants for fraternal insurance, Drs. R. E. Moss, T. Millman and C. A. McCollum. The following officers were elected: President, R. E. Moss, Port Huron, Mich.; vice chairman, T. Millman, Toronto; secretary, J. T. Craig, Kansas City.

A NATIONAL PARK IN MINNESOTA.—A proposition is being discussed looking to the reservation of from one to three million acres of land in northern Minnesota, for use as a national park. While the matter had been mentioned before, the Minnesota State Medical Society took the matter up at its meeting a year ago and appointed a committee to take preliminary action. The committee consisted of Drs. J. W. Bell, H. H. Kimball, and W. S. Layton of Minneapolis, and Dr. Parks Pitcher of St. Paul. Committees were also appointed from other bodies, and the matter was finally brought before the state legislature at its last session. This body memorialized Congress to withhold from sale for one year the land that it is contemplating to make into the park. Committees from Duluth, Minneapolis, St. Paul and other places are at work developing the scheme, with considerable prospect of success. If the idea of some of the promulgators is carried out, a national sanatorium for consumptives will be established somewhere in the park.

Therapeutics.

Treatment of Whooping-Cough.

In an article on whooping-cough, published in *The Therapist*, Dr. Edward F. Willoughby says: "The drug on which I have for more than twenty years mainly relied is choral-hydrate, of which the youngest infants are very tolerant. In some cases it may be useful to combine a bromid with the chloral, and of late years I have found its action greatly aided by combining it with antipyrin—chloral, antipyrin and vin. ipecac, with syrup being now my favorite formula."

Cheney (Keating's Cyclopedia, vol. v) says, regarding the treatment of pertussis: "The patients, of course, should be isolated and allowed to have plenty of fresh air both by day and night, and should be allowed plenty of good nourishment. The drugs to be employed are: 1. Antiseptic agents, the best of which are the vapors of carbolic acid, cresolin and thymol, and quinin, which can be included in this class. It is very valuable, if the child can retain it, given in doses according to the

age of the patient—3/20 of a grain for each month and 1½ grains for each year of the child's age—three times a day. 2. Antispasmodics, of which the most useful is bromoform, which should not be given in solution, but on sugar in a spoon, in doses of 1 drop every four hours, increasing the dose by one drop each day until an effect is produced. Antipyrin in combination with bromid of sodium is also of much value in the treatment, given in doses of ½ grain of the former to 2 grains of the latter, for a child of eight months, 1 to 2½ gr. for a child of fifteen months, and 2 to 3 grains for a child of from 2½ to 4 years of age. Belladonna may be given in small doses, repeated until the physiologic effect is produced."

Salophen.

M. Cresle considers salophen as now definitely settled in the therapeutic domain, says the *N. Y. Medical Journal*. It exerts, he says, an incontestable action upon acute and subacute rheumatism, but its effects are less constant than those of salicylate of sodium. In chronic and blennorrhagic rheumatism it has not shown itself superior to other drugs. Salophen possesses a powerful analgesic action, which is exercised even in those cases where this drug can not be looked for to effect a cure. It has given good results in migraine, in various neuralgias and in sciatica. Salophen employed in a medium dose produces no phenomena of intolerance, nor does it occasion headache, buzzing in the ears, or troubles of vision, but tolerance appears to be rapidly induced. In certain cutaneous affections, salophen appears to have some efficacy, but it is necessary to wait for further experience. The medium dose of salophen is sixty grains daily, more or less, according to the gravity of the complaint.

After Removal of Gall-Stones.

W quote from a paper by Dr. Hal C. Wyman in the *Western Clinical Recorder*:

"A prescription which I have often used with great advantage to my patients from whom I have removed biliary calculi by a surgical operation is

℞. Podophyllin ..... gr. i
Leptandrin ..... gr. v
Phosphate of soda ..... ʒi
M. Div in twenty powders. Sig. Take one with a full glass of water once in three hours.

Another is:

℞. Tinct. taraxaci
Tinct. euonymi
Acidi nitrohydrochlorici dil āā ..... ʒii
Elixir simplicis q. s. ad ..... ʒiv
M. Sig. Take a teaspoonful with a raw egg in a glassful of cold water before each meal.

Another to relieve the pain and distress which sometimes follow operations.

℞. Extracti piscidiæ erythrinæ ..... ʒii
Spiritus etheris comp
Spiritus vini rect. dil, āā ..... ʒi
Syrupi pruni q. s. ..... ʒii
Olei cinnamomi ..... gtt. i
M. Sig. Take a teaspoonful in wineglass of hot water once in three hours until pain is relieved.

The Use of Alkalies.

There is a curious paradox running through the medical literature of the past few years concerning the local and systemic result of the administration of alkalies. The writers on physiology and on diseases of the stomach have quite generally maintained that alkalies when they reach the stomach, cause an increased flow of gastric juice, the acid of which they say completely neutralizes the alkalies and there remains in the stomach an excess of acid. On the other hand have stood the advocates of the use of alkalies to diminish the acidity of the urine in gout, cystitis and renal affections. It is fairly clear that if the alkali is entirely neutralized in the stomach it can hardly change the reaction of the urine. As it is certain that the acidity of the urine may be changed by the administration of alkalies, the burden of proof is cast on those who maintain that these salts increase the flow of acid into the stomach. Late physiologic and pharmacologic studies throw some light on this problem. No recent experimenter has been able to demonstrate that placing an alkaline solution in the stomach has any effect on the flow of the gastric juice. So it would seem that the well-established therapeutic uses of the alkalies in appropriate conditions are well founded, while the theoretic objection, that they produce a corresponding increase of the acidity of the stomach, is not well taken. Indeed the common experience of clinicians, that alkalies frequently disorder gastric digestion, indicates rather clearly that when the acid of the gastric juice is once neutralized, digestion may be interfered with because an acid reaction of the stomach-contents is necessary to the proper function of the organ. For this reason it is the general consensus of experienced opinion that the most effective alkali to administer for the relief of gastric acidity is the weakest—magnesium carbonate,—while for the systemic and urinary effect the dilute alkaline mineral waters are the most useful.

A Nervine Tonic.

℞. Asafœtidæ ..... ʒi
Acidi arseniosi ..... gr. ss
Strychninæ sulphatis ..... gr. ss
Ext. sumbul ..... ℈iss
Ferri subcarbonatis ..... ℈ii
Quininæ valerianatis ..... ℈i
M. Make capsules No. xxiv. Sig. One capsule after each meal.

—*Brown.*

Sciatica.

℞. Chloralis ..... ʒiii
Sodii bromidi ..... ʒiii
Morphinæ sulphatis ..... gr. vi
Quininæ sulphatis ..... gr. liv.
Pulveris camphoræ ..... ʒss
Elixir taraxaci comp ..... ℥vi
Tinct. aconiti ..... m. xxiv
M. Sig. A dessertspoonful every three hours until relieved.

—*Wilson.*

℞. Pulveris opii
Pulveris ipecacuanhæ āā ..... gr. xii
Sodii salicylatis ..... ʒi
Ext. cascaræ fluidi q. s.
M. Div. in pil No. xii. Sig. One or two pills for a dose.

—*Benjamin Ward Richardson.*

[Attention should be called to the full dose of morphin and opium respectively in the above prescriptions, and the danger of producing the drug habit if used very long.—ED. JOURNAL.]

Sulphate of Sodium in Catarrh of Stomach.

According to *La Medicine Moderne*, Simon, of Vienna, uses small doses of sulphate of soda for the treatment of this condition. He usually gives from ten to fifteen grains of it in about six ounces of hot water, and under these circumstances the catarrhal condition of the stomach, with its hyperacidity, passes away, and the sensations of pain and discomfort in the epigastrium with nausea are relieved. This method of treatment is supposed to do good by improving the motor power of the stomach.

Sodium Chlorate in Gastric Affections.

Gastric affections treated with chlorate of sodium in daily doses of from 75 to 120 grains are said to be usually much benefited, says *Merck's Archives*. Soupault reports that every variety of dyspepsia is clearly improved by it, and in cancer the pains, nausea and vomiting decrease or entirely disappear; the patient eats much more and with less disgust, the hematemesis ceases and the general condition improves. In gastric tumor, however, no benefit was obtained. In chronic gastritis, no matter what the cause or anatomical form, the results were also appreciably good. The action of sodium chlorate is particularly excellent in hypersthenic dyspepsia, or hyperchlorhydria and in the conditions resulting—gastrosuccorrhea and gastric ulcer—exercising a lasting result. In the paroxysmic attack so frequent in sufferers from hyperchorhydria and

ulcers, the effects are particularly brilliant. In asthenic dyspepsia, however, the effect is doubtful or altogether insufficient. In the doses named, no ill effects were ever observed, even though the remedy was given for several months.

Gastric Hyperacidity with Constipation.

℞ Magnesiæ
Pulveris rhei āā.....3ii
Sodii bicarbonatis
Pulveris sacchari āā.....3iv
Olei menthæ piperitæ q. s.
M. Sig. Half to one teaspoonful in water two hours after each meal.

Intestinal Fermentation with Constipation.

℞ Ext. aloes.....gr. vi
Pulveris rhei.....gr. vi
Benzosol.....gr. ix
Ext. hyoscyami.....gr. vi
M. Ft. caps No. xii. Sig. One after meals.
—*Thomas Hunt Stuckey.*

Eczema.

℞ Acidi hydrocyanici diluti.....m. xl
Olei cadini.....ʒi
Saponis viridis.....ʒii
Olei rosmarini.....ʒiss
Aquæ destil., q. s. ad.....ʒv
Misce et fiat linimentum.
—*Anderson.*

OINTMENT FOR ECZEMA.

℞ Pulveris cocci.....gr. i
Potassii cyanidi.....gr. vi
Unguenti aquæ rosæ.....ʒi
Fiat unguentum. Sig. Rub a little firmly over the itching parts; let none of the ointment remain undissolved on the skin.
—*Anderson.*

ECZEMA IN CHILDREN.

℞ Liquoris potassii arsenitis.....m. xi
Vini ferri amari
Syrup tolutani
Aquæ anethi, āā.....ʒi
M. Sig. A teaspoonful thrice daily after food.
—*Erasmus Wilson.*

Eruptive and Simple Fevers.

℞ Vini antimonii.....ʒi
Potassii vel sodii nitratis.....ʒi
Spts. etheris nitrosi.....ʒiii
Liq. morphinæ sulphatis.....ʒi
Syrupi acidi citrici.....ʒss
Liq. potassii citratis.....ʒiv
M. Sig. Take a tablespoonful every two hours.
—*Carson.*

Diuretic.

℞ Strychninæ sulphatis.....gr. i
Caffeinæ hydrochloratis.....ʒi
Pulveris digitalis.....gr. xxx
M. Disp. in caps No lx. Sig. One capsule every three or four hours.

Deaths and Obituaries.

FREDERICK SMITH THOMAS, M.D., died at his home in Council Bluffs, Iowa, August 13. He had been suffering from dysentery for several days, but had recovered sufficiently to be out, when he had a relapse, from which he died. Dr. Thomas was born in Columbia County, New York, in 1845, and was taken to Illinois by his parents three years later. He graduated from what is now known as the College of Physicians and Surgeons of Keokuk, Iowa, in 1870. After practicing in different places in Iowa he went to Council Bluffs, in 1887, where he has since resided.

FREDERICK H. FINCKE, M.D., died in Chicago, August 13, of cardiac disease. His home was in Baltimore, Md., and he had been assigned to duty in the Department of Liberal Arts and Chemical Industries at the Paris Exposition. He was a graduate, Class of 1891, of the University of Maryland School of Medicine, Baltimore.

WILLIAM D. HARTMAN, M.D., University of Pennsylvania, 1839, died at his home in Westchester, Pa., August 16, aged 84 years. He was a conchologist of authority and had written much on his favorite topic, while still in the practice of his profession, which was active for over fifty years.

TENNIS SCHENCK, M.D., College of Physicians and Surgeons, New York, 1865, died at his home in Bath Beach, now of the Borough of Brooklyn, N. Y., August 15, aged 58 years. He was of a well-known family that early settled in that part of Long Island and was a graduate, in the Class of 1859, of Union College, New York State. He early identified himself with the King's County Hospital and continued his relations with it for many years.

Miscellany.

Prophylaxis of Tuberculosis.—The quarrymen of the Rehberg district in Germany, according to *Frankfurter Ztf.*, August 9, have solved the question of the prophylaxis of tuberculosis, which is so frequent and fatal among them, by simply dropping their tools in June and traveling to the coast, where they take service as sailors or herring fishermen for a few months, returning brown and hardy to their quarries in the fall.

Artificial Upper Jaw.—A patient was exhibited at the recent German National Dental Congress, whose entire upper jaw had been removed and replaced with an artificial contrivance, the work of privatdocent Jessen of Strasburg and the dentist Hahl, with alveolar process and teeth, the two halves connected with springs. It was worn without inconvenience and enabled the patient to speak. Before it was applied articulation was impossible. This Congress, by the way, absolutely refused to receive female dentists as members.

The Pearl a Urinary Calculus.—According to certain naturalists, the pearl is a pathologic product, an attempt to get rid of some foreign body, a grain of sand, fragment of shell or something of the kind, which falls into the genital gland or vicinity, and is thus in fact merely a renal or urinary calculus, and the oyster an unfortunate mollusc victim of nephritic lithiasis. An article in the *Revue des Deux Mondes* describes the efforts that have been made to cultivate pearl development by trephining the shell and introducing a tiny artificial pearl as a nucleus.

Ignorant Midwives in Check.—The Illinois State Board of Health has sent the following circular to every midwife in the state, whose address could be found. Good results can already be seen by comparing the advertising columns of the newspapers to-day with those of a month ago:

Madam—Under the provisions of the Act to Regulate the Practice of Medicine in the State of Illinois, approved April 24, 1899; in force July 1, 1899; midwives are forbidden to call or advertise themselves as physicians or doctors, and prohibited from using any drug or medicine and from attending other than cases of labor.

The same law states that any one shall be regarded as practicing medicine, who shall treat, *profess* to treat, operate on or prescribe for any physical ailment or any physical injury to, or deformity of another.

You are directed, therefore, by this Board, to immediately discontinue all advertisements in the newspapers, in which you are designated as "Doctor," "Mrs. Doctor," "Doctress," or as "Physician," or in which you offer to treat human ailments; and to remove from your office, residence, or place of practice, all signs advertising you as "Doctor," "Mrs. Doctor," "Doctress," or "Physician." You are directed further to confine your practice to midwifery alone, as you are licensed as a midwife and as such are authorized to attend cases of labor only. You have no authority whatever to treat, or profess to treat, diseases of women, or to treat or profess to treat any physical ailment of another.

If you wish to advertise in the newspapers, or otherwise, you must do so as a midwife.

A violation of the above regulations, will subject you to prosecution by this Board, and will be deemed a sufficient cause for revoking your Certificate.

A Plea for the Outcast.—Dr. Denslow Lewis of Chicago, in response to the request of Dr. Isadore Dyer of New Orleans, the representative for the United States to the International Conference for the Prophylaxis of Syphilis, etc., to be held next month in Brussels, has written to the secretary-general and desires the publication of his reply, which is as follows:

Your conference is the most important gathering of medical men the world has ever known. The matters you will discuss are of vital interest to the individual and to society in general. The tendency of your deliberations is altruistic and philanthropic. You will consider the consequences of a God-given instinct improperly and injudiciously applied. You will treat, in no illiberal manner, of practical methods best calculated to preserve the health of our youth and to protect the best interests of society.

In consideration of the prostitute I beg that no inconsistent spirit of assumed superiority may prevail. I trust it will be remembered that she is a victim of man's ill-directed obedience to a dominant instinct. She is the creature of our civilization and not a criminal. She is entitled to care and not punishment. She is a citizen who should receive the protection of our laws. She is an outcast from certain grades of society only. She is still a woman and at one time she was a pure and innocent child. She is now what she is not, because of innate depravity, but because our sociologic conditions fail to solve the problem the solution of which would make her existence impossible. She is of special interest to the hygienist and practitioner of medicine in so far as she serves as a disseminator of disease. Her care should consist in restrictive measures against the spread of disease and only to that extent should she be the object of police surveillance. Facilities for diagnosis and treatment of venereal disease should be multiplied. Measures which infringe on the personal liberty of the prostitute are inconsistent with our civilization except so far as they bear on the prophylaxis of disease.

Nature and Cause of Yellow Fever.—The Commission appointed by the U. S. Marine-Hospital Service, to investigate the nature and cause of yellow fever, has made its report. Drs. Wasdin and Geddings claim to have found that the bacillus icteroides of Sanarelli is the true parasite of the disease. This conclusion is based on the study of twenty-two cases diagnosed by native physicians as yellow fever, and in fourteen of these the diagnosis was confirmed by the Commission. In thirteen of these the bacillus icteroides was isolated by Drs. Wasdin and Geddings, and in the other it was also found by another observer to whom tube cultures made at the autopsy had been given. The Commission also isolated the organism in 83 per cent. of the cultures made at autopsies at New Orleans, from cases occurring in the yellow fever epidemic in 1897, thus identifying the Cuban and the Louisiana bacilli. The blood from a number of patients suffering from other disorders failed to reveal the germs, though taken in the same way, and tested in the same manner. Similar tests were made with thirty-one bodies of patients dead from various diseases, but in none was this bacillus found. The Commission therefore assumes that the organism of Sanarelli is found only in bodies sick with, or dead from yellow fever, conceding at the same time that in many of the sick the blood may not yield the germ. Experiments were also made to ascertain the natural history of the organism, its mode of entering the body, its colonization therein, its toxic possibilities, and its distribution in the organs post-mortem. They found it pathogenic by artificial inoculation to various animals, but the effects were also the same with other germs, the bacillus X., Havelberg's bacillus, bacillus coli, etc. Then placing these animals under condition of natural infection, they found that the bacillus icteroides was specific as compared to those mentioned above, and that it should be classed with bacillus cholerasuis, and bacillus typhosus, as a true infection organism. The Commission also claims to have determined that the route of infection is through the lungs, and that from there it passes to the general circulation. Their conclusions are:

1. That the micro-organism discovered by Prof. Giuseppe Sanarelli, of the University of Bologna, Italy, and by him named "bacillus icteroides," is the cause of yellow fever.

2. That yellow fever is naturally infectious to certain animals, the degree varying with the species; that in some rodents local infection is very quickly followed by blood infection; and that, while in dogs and rabbits there is no evidence of this subsequent invasion of the blood, monkeys react to the infection the same as man.

3. That infection takes places by way of the respiratory tract, the primary colonization in this tract giving rise to the earlier manifestations of the disease.

4. That in many cases of the disease, probably a majority, the primary infection, or colonization in the lungs, is followed by a "secondary infection," or a secondary colonization of this organism in the blood of the patient; this secondary infection may be complicated by the coinstantaneous passage of other organisms into the blood, or this complication may arise during the last hours of life.

5. That there is no evidence to support the theory advanced by Prof. Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus icteroides can not be found in the blood, or organs in which it might be deposited therefrom.

6. That there exists no casual relationship between the bacillus "X" of Sternberg and this highly infectious disease; and that the bacillus "X" is frequently found in the intestinal contents of normal animals and of man, as well as in the urine and the bronchial secretion.

7. That, so far as your Commission is aware, the bacillus icteroides has never been found in any body other than one infected with yellow fever; and that whatever may be the cultural similarities between this and other micro-organisms it is characterized by a specificity which is distinctive.

8. That the bacillus icteroides is very susceptible to the influences injurious to bacterial life; and that its ready control by the processes of disinfection, chemical and mechanical, is assured.

9. That the bacillus icteroides produces *in vitro*, as well as *in vita*, a toxin of the most marked potency; and that, from our present knowledge, there exists a reasonable possibility of the ultimate production of an anti-serum more potent than that of Prof. Sanarelli.

London.

(*From Our Regular Correspondent, August* 1).

Infant Feeding and Hot Weather.—Owing to the hot weather during the last six weeks, the diarrhea rate among children in the large cities has gone up by leaps and bounds, 98 deaths one week, 204 the next and 466 last week. But our profession has reason to be proud of the results of its work and teaching, for in spite of the unprecedented length and severity of the heat wave, the diarrhea rate has not even yet reached the "normal" for this week of the year. This must be attributed to the more general use of milk and the better preserved and sounder condition of both it and other infant foods, thanks to vigilance and sanitation authorities. But there is room for much improvement in this respect yet, and we Americans may feel honestly proud of the example we are setting to the British brethren. The best of English dairies are not equal to the average of our own in respect to scrupulous cleanliness and skill in handling their product. Scarcely any of them use ice in any form, or cool their milk before it is sent out, and 90 per cent. of all milk and cream is still delivered in small black and battered tin cans with brass mountings, in place of glass jars. A few dairies use bottles, but the usual "Rhine-Wine" shape with small necks and rubber corks, and the suggestion of the use of glass jars is received with horror! "Why, they would be broken in a week!" It is hard to get milk which does not deposit the ancient and familiar black sediment on standing and, as a consequence, most of it will hardly keep for twelve hours, even in a fairly cool place. Our climatic extremes, aided by the more general intelligence of our people, have driven us to a higher plane in these matters.

University of London.—Another welcome development in medical education in England has been inaugurated in connection with the proposed University of London. This is a meeting of the teachers of anatomy, physiology and medical chemistry from the various hospital medical colleges of London, for the purpose of trying to arrange either a central teaching institution or a uniform curriculum for the first two years, or scien-

tific portion of the medical course. The conference was a stormy one and ended in something approaching a split, with the appointment of two separate sets of committees, one to devise means by which the improvement could be brought about and the other how it might be prevented. But to get the meeting held at all and the subject on the tapis was a great advance. As it stands at present, the anatomy and physiology teaching of London's few hundreds of junior medical students is divided up among eight or ten complete staffs of teachers, nearly all of whom are so poorly paid that it is hopeless to expect an adequate life income from their work. Consequently they teach in the good old antediluvian fashion until such time as they can get "promotion" to surgical and medical positions, working up a practice meanwhile. As was brought out with painful distinctness in the recent loss of London's only physiologist of international reputation, Prof. Schaefer, to poor, but intelligent little Edinburgh, there is scarcely a chair of anatomy or physiology, or for the matter of that, of any branch of scientific medicine in London, which has a decent salary attached to it. One promising young student after another has started out in original research work, only to sink back into the slough of practice, after eight or ten years of genteel starvation. If the Jenner Institute and the University of London would only establish half a dozen chairs in scientific medicine, between them, with salaries, which are by themselves a guarantee of a responsible life income, such as a man could live on and keep his own self-respect, they would, by giving this class of eager workers some reasonable hope for the future, do an incalculable service to English medicine. There are scores of brilliant young fellows in the English profession, who love their chosen work and would be glad to devote their whole lives to it, if they only had a guarantee of bread and salt in return. It is precisely in giving young men of this sort the mere pittance that they require, and a chance to win by original work, positions of moderate competence in later life, that the secret of Germany's wonderful strides in the march of scientific progress lies, not merely medical but general.

VACCINATION.—An interesting vaccination situation has developed, and is still developing, at Leicester. This town has long been one of the head-centers and banner-bearers of the "antis," as owing to the intensity of popular prejudice against "blood-poisoning" vaccination there has been almost completely suspended for some time. Every member of the Board of Guardians is a rabid antivaccinationist, and as prosecution for non-conformity to the law rests with this body, the statute has been a dead letter for years past. However, they still had a vaccination officer, whose salary was paid under protest, although his occupation was like Othello's. A short time ago he died and some massive intellect on the board conceived the daring gallery-play of refusing to appoint another. This was too good an opportunity of making spectacular idiots of themselves to be missed, and, moreover, it would restore the "anti" propaganda to that place in the popular eye, which it is rapidly slipping out of since the conscience clause was passed. The government remonstrated with them without effect. A writ of mandamus was applied for before the Queen's Bench, and this was resisted by the Guardians who came up to London in a body, attended by brass bands, obsequious local M.P.'s, cheering crowds of fanatics, and all the accessories of martyrs for the cause. The writ was of course issued, ordering them to at once appoint or be imprisoned for contempt of court, whereupon they pranced back to Leicester and are now holding ghost-dances and working themselves up to the sublime pitch of suffering for the faith and going to jail, when the time given in the mandamus expires. Their clap-trap stage-play has succeeded beyond their hopes. They have attracted the widest attention, but not of the kind they desired. On all hands one hears only words of disapproval and disgust, and the episode is going to do yeoman service in the cause of science and common sense. It is the most convincing demonstration imaginable of what a besotted relic of barbarism and ignorant fanaticism the antivaccination movement is.

EPIDEMICS OF POISONING.—The two "epidemics" of food poisoning are still mysteries. Nothing has been discovered by the analyst, in any of the cherries, milk or other food eaten by the eighty children at Blackheath, (see JOURNAL, August 12, p. 433) nor can any cause be discovered for the poisonings among the guests at the Inns of Court Hotel a few days before. Another of the guests attacked has just died and several are still seriously ill with symptoms of ptomain poisoning. We may, however, breathe easier on this side of the Atlantic, for samples of the "tinned American apricots," which were at once blamed for the entire episode, by the scientists of the daily press, as soon as discovered on the bill of fare, have been tested and found perfectly sound and wholesome. The Blackheath episode has however given the irrepressible idiot who "writes to the papers" one of the chances of his life, and alas he signs himself "An American." He gravely informs the admiring British public that he can explain the mystery, as "no well-informed American would think of eating cherries and milk together, knowing that in combination they form a deadly poison," and President Tyler is alleged to have died in consequence of imbibing this unhallowed mixture, there being, presumably, "no well-informed American" within shouting distance to warn him of the certain consequences. What does our alleged compatriot mean by keeping priceless toxicologic truths like these buried in his bosom until they are too late to be of any use?

WATER FAMINE.—London is threatened with a water famine, as she always will be in summer until she gets some other source of supply than the charming little brooklet, disguised under the name of "Father Thames."

Canada.

(From Our Regular Correspondent.)

TUBERCULOSIS IN CANADA.—The antituberculosis crusade is being placed on a firm footing in Canada. So far, no great national movement has been inaugurated; but the enlightened and public-spirited physician-citizen is again giving evidence of what true philanthropy there is in our own profession. In June last, the Ontario Medical Association took up a whole afternoon on this one topic. The symposium on tuberculosis was opened in an admirable paper on the "Sanitarium Treatment of Pulmonary Tuberculosis," by Dr. Vincent Y. Bowditch, of the Sharon Sanitarium, Boston, which was followed by Dr. N. A. Powell, Toronto, chief consulting physician to the Gravenhurst Sanitarium, in a talk on "The Earliest Diagnosis and Selection of Cases for Sanitarium Treatment." "Home Treatment and Prevention" was the subject of Dr. T. F. MacMahon's (Toronto) paper; while Dr. Charles Sheard, medical health officer, Toronto, spoke on "Care and Prevention." Montreal and the lower provinces have been by no means idle. Dr. H. A. Lafluer has contributed a readable paper on "The Recognition of Incipient Tuberculosis in Man;" while Dr. McEachren, dean of the faculty of comparative anatomy, McGill University, and chief inspector and veterinarian for the Dominion, has ably dealt with the "Prevention of Tuberculosis in Animals, with special reference to prevention in the Dominion." Speaking of his experience with the tuberculin test and its results in animals, he stated that over 10,000 cattle, within the past twelve months, have been tested at government expense, from the Atlantic to the Pacific. In the large number of post-mortems made, there was scarcely a failure to discover the tubercle reported. Before the Montreal Medico-Chirurgical Society, Dr. A. J. Richer read a paper on "Sanatoria—Locality and Cure." He told of the Gravenhurst Sanitarium in Muskoka, situated at a height of somewhat less than 800 feet above sea-level, and emphasized the good and excellent work that institution had been doing the last two years. He thought Kamloops, B. C., at an altitude of 1100 feet, with as dry a climate as Colorado and a mean temperature of 5 degrees above that of Montreal, and more uniform at that, offered

exceptional advantages for a sanatorium. It is the day for the sanatorium and open-air treatment, and Canada promises not to be very far behind in this regard.

THE DISPENSING PHYSICIAN.—Another question rapidly coming to the front, more especially among physicians in cities and towns, is that of the "dispensing physician." From Mr. L. J. Melius, a member of a well-known Halifax drug firm, has emanated an article on this topic, which that gentleman read at the summer meeting of the Pharmaceutical Association of Nova Scotia. Mr. Melius can probably speak with some authority on the subject, as his firm has the reputation of dispensing more physicians' prescriptions than any other single drug firm in the Dominion. Especially in the maritime provinces has this article attracted attention; but elsewhere the profession is gradually becoming alive to the fact that it will be more profitable for the doctor to do his own dispensing; better results in some cases will also accrue. Mr. Melius, however, puts the case strongly for the druggist and puts it well. Flagrant violations of ethical customs between physicians and chemists are all too common on the part of the latter; and the druggist will only have to thank his own covetous propensities for it, when the physicians do all their own dispensing. In Toronto, a pharmaceutic firm has recently been established, whose whole business patronage comes through physicians, and their aim is to supply the dispensing doctor with everything needful. We are glad to see Mr. Melius, however, calling on his fellow wielders of the pestle to discourage "ecunter prescribing," with all their might. He might go still further and denounce disgraceful substitution, "repeats," the placarding on their walls and store-fronts of ephemeral nostrums and the filling of prescriptions for others than for whom originally intended.

HEALTH OF LEGISLATORS.—The long session of the Dominion House of Commons, just terminated, in its effects on the physical health of members is worthy of both comment and a passing notice. How frequently during the lifetime of this parliament (elected in 1896) have the two leaders on both sides of the house been called on to pronounce an eulogium and give expression to their sorrow, at the departure of some fellow member at the hand of death, is instanced from the fact that fifteen times they have had to perform this duty. The effects of long hours and late sittings, and very often all-night sessions on a house composed of 215 members is truly startling. The assembly hall is notoriously deficient in point of ventilation; and combined with this, the fact that our public men are known to take very little systematic exercise, all seems to militate against them. Public life is not all a bed of roses. Our statesmen should go in for more sport and exercise, abandon these late sittings and all-night sessions, and no doubt reap the reward in a greatly reduced death-rate.

HUMANIZED MILK.—Dr. Laberge, city medical health officer, Montreal, has lately received an important letter from Dr. D. Gilbert of Brussels, which deals with the system of sterilized milk in vogue in that country, known as "maternized" or "humanized" milk. Parliament and the health authorities in that city have been taking a keen interest in the various branches of the pure milk question. He describes the process for "humanizing" milk, and concludes by showing how infants can be fed on this fluid, until they reach 8 months of age, at a nominal cost. Dr. Laberge has already interested himself in the formation of a company or association which will supply this "humanized" milk, prepared on the scientific principles on which many countries are now supplying it.

"CHRISTIAN SCIENCE" IN B. C.—British Columbia has so far as known supplied the latest victim to "Christian Science" cussedness. "Evangelist" Eugene Brooks tried to cure a child of Captain McCoskrie of Victoria, by the method, with fatal results. The child was taken with a serious illness and Dr. Duncan sent for. This was the only visit of the Doctor, and was made a month prior to the lad's death. Brooks is a disciple of George Armour Fair's sect, Chicago. The father is naturally very much incensed and talks of taking proceedings against the imposter, as it was contrary to his expressed wishes that his son should be treated in any such manner, he himself being away from Victoria on a sea voyage and the imposition being practiced on his invalid wife.

Queries and Minor Notes.

INTERNATIONAL MEDICAL CONGRESS.

CLEARFIELD, PA., August 17, 1899.

To the Editor:—Will you let me know who is chairman of the section of genito-urinary surgery at the next meeting of the International Medical Congress? When and where is it to be held? J. A. M.

ANSWER:—Paris, 1900, Prof. Chauffard, General Secretary.

ETHICS AND PREVENTION OF CONCEPTION.

WILKESBARRE, PA., August 21, 1899.

To the Editor:—In the JOURNAL of August 12, I notice among the Current Medical Literature items, an article (No. 11) by John C. King. Will you please inform me where I can obtain a copy and price? G. F. L.

ANSWER:—The original paper was published in the *Southern California Practitioner*, Los Angeles, Cal., July. Send ten cents to the publisher, for a copy.

PAROTID EXTRACT.

PRAIRIE CITY, ILL., July 19, 1899.

To the Editor:—I note that parotid extract is highly recommended in the JOURNAL of July 12, 1899, as a cure for ovarian troubles. Will you kindly inform me where it can be procured, and the dosage? I have a case which that description fits exactly. W. G. H.

ANSWER:—The parotid gland extract used by Malleti, in the cases noted in the article abstracted, was from the Phospho-Albumin Co., Chicago, and was put up in three-grain capsules. In the cases where he mentions the dose given, it was usually 3 grains, three times a day. Parotid extract is also prepared by Armour & Co. and others.

ASCITES IN CHILDREN.

HILLSBORO, N. D., August 4, 1899.

To the Editor:—In *Pediatrics* July 15, 1899, there is an article headed, "Radical Cure of Ascites in Children," referring to the production of "Anastomosis of Vessels of Liver and Abdominal Wall," and some cases of Professor Talma. What did Professor Talma do? Did he operate to join these vessels successfully? T. M.

ANSWER:—Talma's patient was operated on by opening the abdomen and fastening the greater omentum and the gall-bladder to the abdominal wound, thus setting up a collateral circulation. In a later operation the spleen was similarly treated. His case is reported in the *Berliner Klin. Woch.*, 1898, pp. 833-836. The case is briefly described in this JOURNAL, May 27, 1899.

TREATMENT OF DEAFNESS IN THE PNEUMATIC CHAMBER.

EVANSVILLE, IND., August 7, 1899.

To the Editor:—In the JOURNAL for June 10, p. 1311, you give a short extract from the *Muenchener Med. Woch.*, of May 16, concerning deafness treated by means of the pneumatic chamber. Where can this number of the *Muenchener* journal be had, or could you publish the article in full?

Respectfully, T. W.

ANSWER:—The article referred to can be obtained from the publisher J. F. Lehmann, Heustrasse, 20, Munich, Bavaria (Muenchener Medicinische Wochenshrift, xlvi, 20, May 16, 1899). It states that the most complete study of the subject is a pamphlet by Dr. J. Hovent of Brussels, published two years ago by Aug. Bernard of Liège, Belgium: "A Treatment of the So-Called Incurably Deaf People." Among his tabulated observations are five women with simple deafness of five to thirty years' duration entirely cured with one to fourteen sittings. Measles, pseudomembranous angina or catarrh had preceded the deafness in three cases. Five other cases, duration five to nineteen years, were cured with one to eleven sittings, although there was more or less discharge from the ear. His record for 1893-1896 included 138 persons who, with five exceptions, had all been declared incurably deaf by specialists in Belgium and France.

FOR SALE TO THE HIGHEST BIDDER.

—, ILL., August 10, 1899.

We can hardly believe that there are men in Chicago, who are willing to sacrifice their professional honor as is indicated in the letter printed below. Evidently there is one, but there certainly can be no others. If there are, then of course it is good business sense on the part of those who have patients to sell, to sell them to the highest bidder. The letter was written to a well-known surgeon of Chicago, and as a similarly worded letter was sent to at least one other surgeon, by the same writer, it is probable that he will get the best terms that can be had.

—, ILL., August 10, 1899.

Dear Doctor:—It so happens that I have occasion to refer operation cases to the city for treatment. I have been sending them to a gentleman who has recently treated me in a way I don't like, and I am therefore desirous of making arrangements with some one else. What portion of the fee do you usually give the doctor who brings the case? I am free to say I have always had 50 per cent. This is not too much, because I always know just what the patient can stand, and have him worked up for a good fee beforehand. This is a rich farming country, you know. An early answer will oblige, as I have several cases that ought to be operated on very soon.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 17, 1899:

Lomax S. Anderson, lieut. and asst.-surgeon, 29th Inf. Vols., having tendered his resignation is honorably discharged August 14, 1899.

Fred D. Barney, acting asst.-surgeon, from New York City to San Francisco, Cal., for duty in the Department of California.

William C. Berlin, acting asst.-surgeon, previous orders revoked; he will report for duty at Fort Snelling, Minn.

Rufus D. Boss, acting asst.-surgeon, from Fort Armistead, Md., to temporary duty at Fort Myer, Va.

Robert Boyd, acting asst.-surgeon, leave of absence granted, with subsequent assignment to the Department of California.

Alfred E. Bradley, major and surgeon Vols., from the hospital ship *Relief* at San Francisco, Cal., to his proper station, Fort Yellowstone, Wyoming.

Earl S. Bullock, acting asst.-surgeon, from Fort Collins, Colo., to Fort Bayard, N. M.

Henry J. Combel, acting asst.-surgeon, from Bay St. Louis, Miss., to Fort Sam Houston, Texas, to accompany the 33d Inf. Vols. to Manila, P. I.

Edward T. Comegys, major and surgeon, U. S. A., to close the medical supply depot at Atlanta, Ga., and assume charge of the general hospital and supply depot at Savannah, Ga.

Calvin DeWitt, lieut.-col., and deputy surgeon-general U. S. A., now at Fort Monroe, Va., to take charge of the Josiah Simpson General Hospital.

Douglas F. Duval, lieut. and asst.-surgeon, U. S. A., former orders revoked; he will report at Brooklyn, N. Y., for duty on the hospital ship, *Missouri*.

Robert M. Embers, Sr., acting asst.-surgeon, from Little Rock, Ark., to Fort Leavenworth, Kansas.

Thomas E. Evins, acting asst.-surgeon, from New Brighton, N. Y., to temporary duty at Fort Crook, Neb.

Albert P. Fitzsimmons, acting asst.-surgeon, from Tecumseh, Neb. to San Francisco for duty in the Department of California.

Robert J. Gibson, major and surgeon, from Angel Island, Cal., to Manila, P. I., for duty with the 8th army corps.

Herman W. Gross, acting asst.-surgeon, from Brookline, Mass., to Plattsburg, Barracks, N. Y., to accompany the 26th Inf. Vols., to Manila, P. I.

Andy Hall, acting asst. surgeon, from Mount Vernon, Ill., to San Francisco for duty in the Department of California.

D. B. Hartinger, acting asst.-surgeon, from New York City, to Middleport, Ohio, for annulment of contract.

Philip F. Harvey, major and surgeon, U. S. A., from Fort Snelling, Minn., to the presidio of San Francisco, Cal.

John Sturgeon Hill, acting asst.-surgeon, from Allegheny City, Pa., to the Department of California.

Deane C. Howard, captain and asst.-surgeon, U. S. A., from Fort Columbus, N. Y., to temporary duty at West Point, N. Y.

D. J. Johnson, acting asst.-surgeon, member of an examining board in session at Fort Terry, Plum Island, N. Y.

Vertner Kenerson, acting asst.-surgeon, from Fort Myer, Va., to Buffalo, N. Y., for annulment of contract.

Matthew Leepere, acting acting asst.-surgeon from Louisville, Ky., to Fort Crook, Neb.

William F. Lippitt, Jr., captain and asst.-surgeon U. S. A., member of a board in Washington, D. C., to examine persons designated for appointment as second lieutenants in the army.

Robert J. McAdory, acting asst.-surgeon, from duty in the Department of California to the hospital ship *Relief*, now at San Francisco, Cal.

J. H. Mitrick, acting asst.-surgeon, from Baltimore, Md., to San Francisco, Cal., for duty in the Department of California.

Edward B. Moseley, major and surgeon U. S. A., from the Presidio of San Francisco, Cal., to post duty at Angel Island, Cal.

Edward L. Munson, captain and asst.-surgeon U. S. A., member of a board in Washington, D. C., to examine persons designated for appointment as second lieutenants in the army.

Charles D. Noble, acting asst.-surgeon, to accompany recruits from Columbus Barracks, Ohio, to San Francisco, Cal., thereafter to return to his station.

Harry O. Perley, major and surgeon, U. S. A., from the Army and Navy Hospital, Hot Springs, Ark., to San Francisco, Cal., to take command of the hospital ship, *Relief*.

Junius L. Powell, major and surgeon, U. S. A., from Fort Riley, Kan., to temporary duty in the Department of California.

Gilbert L. Pray, acting asst.-surgeon from Webster City, Iowa, to duty in the Department of California.

John J. Reilly, acting asst.-surgeon from the transport, *Logan*, to the hospital ship, *Missouri*.

Charles Richard, major and surgeon, U. S. A., from the Josiah Simpson Hospital to Fort Leavenworth, Kansas.

Henry D. Snyder, captain and asst. surgeon, U. S. A., member of a board on clothing at Savannah, Ga.

Dwight B. Taylor, acting asst.-surgeon from the Division of Cuba to Columbus Barracks, Ohio.

George H. Torney, major and surgeon, U. S. A., from Fort Leavenworth, Kan., to command the Army and Navy General Hospital, Hot Springs, Ark.

Cornelius D. Van Wagenen, acting asst.-surgeon, from the hospital ship *Relief*, now at San Francisco, Cal., to New York City for annulment of contract.

Isaac P. Ware, captain and asst.-surgeon, U. S. A., ordered for examination before an army retiring board in session in San Francisco, Cal.

J. Samuel White, acting asst.-surgeon, from Washington, D. C., to the Department of California.

Robert H. Wbite, major and surgeon, U. S. A., (retired) resignation accepted to take effect August 31, 1899.

A. W. Williams, acting asst.-surgeon, from New York City, to Camp Meade, Pa., to accompany the 27th Inf. Vols., to Manila, P. I.

Compton Wilson, acting asst.-surgeon, from New York City to report to the surgeon-general, Washington, D. C., for instructions.

Charles E. Woodruff, captain and asst.-surgeon, U. S. A., former orders revoked, to proceed from Benicia Barracks, Cal., to Fort Riley, Kan., for duty.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 19, 1899:

Asst.-Surgeon F. R. Bogan, detached from the *Wabash* and ordered to the *Scorpion*.

Asst.-Surgeons G. D. Costigan, M. S. Elliott, F. L. Pleadwell, D. N. Carpenter, D. S. Morgan, J. C Pryor, promoted to the rank of lieutenants, junior grade, from July 1, 1899.

Surgeon L. B. Baldwin, ordered to be examined by the naval retiring board, Washington, D. C., September 12, and then home and to wait orders.

Surgeon L. W. Atlee, detached from the *Bennington* and ordered to the *Solace*.

P. A. Surgeon H. D. Wilson, detached from the *Castine* and ordered to the *Solace*.

Asst.-Surgeon W. M. Wheeler, detached from the *Baltimore* and ordered to the *Solace*.

Asst.-Surgeon J. C. Thompson, detached from the *Baltimore* and ordered to the *Castine*.

Asst.-Surgeon D. G. Beebe, detached from the *Monadnock* and ordered to the *Bennington*.

Asst.-Surgeon T. M. Lippitt, detached from the *Solace* and ordered to the *Baltimore*.

Asst.-Surgeon F. M. Furlong, detached from the *Solace* and ordered to the *Oregon*.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the United States Marine-Hospital Service, for the seven days ended August 10, 1899.

Surgeon S. D. Brooks, to proceed to Augusta, Maine, for special temporary duty.

P. A. Surgeon Rupert Blue, to proceed to Columbia, Washington, for special temporary duty.

Asst.-Surgeon L. D. Fricks, to report to P. A. Surgeon A. C. Smith for duty.

Acting Asst.-Surgeon W. C. Todt, granted leave of absence for seven days.

Hospital Steward S. W. Richardson, to report at Washington, D. C., for assignment to special temporary duty; to proceed to Norfolk, Va., and report to P. A. Surgeon A. C. Smith for temporary duty.

Hospital Steward Frank L. Gibson, relieved from duty at the Delaware Breakwater Quarantine Station and directed to report at Washington, D. C., for temporary duty.

Hospital Steward N. C. Comfort, to proceed to Hampton, Va., and report to Surgeon J. H. White for temporary duty.

PROMOTIONS.

P. A. Surgeon G. M. Magruder commissioned as surgeon.
P. A. Surgeon J. J. Kinyoun commissioned as surgeon.

APPOINTMENTS.

Charles A. Warhanik of Illinois, to be junior hospital steward.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 18, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, July 29 to August 12, 9 cases.
Kentucky: Louisville, August 3 to 10, 3 cases.
Massachusetts: Everett, July 29 to August 5, 1 case.
New York: New York, August 8 to 12, 1 case.
Ohio: Cleveland, August 5 to 12, 4 cases.
Pennsylvania: Altoona, August 5 to 12, 2 cases.
Washington: Spokane, July 29 to August 5, 1 case; Tacoma, July 29 to August 5, 1 case.

SMALLPOX—FOREIGN.

Arabia: Aden, May 1 to 3, 1 death.
Belgium: Antwerp, July 22 to 29, 3 cases.
Brazil: Rio de Janeiro, June 30 to July 7, 39 cases, 27 deaths.
China: Hongkong, June 24 to July 15, 2 cases, 1 death.
Greece: Athens, July 22 to 29, 11 cases, 3 deaths.
India: Bombay, July 4 to 15, 15 deaths.
Mexico: Mexico, July 23 to 30, 9 cases, 7 deaths; Progreso, July 13 to 20, 2 cases, 1 death.
Colombia: Panama, July 21 to August 1, 1 death.
Russia: Moscow, July 15 to 22, 7 cases, 4 deaths; Odessa, July 22 to 29, 4 cases, 1 death; Warsaw, July 8 to 29, 3 deaths.
Straits Settlements: Singapore, June 24 to July 1, 2 deaths.
Turkey: Smyrna, July 15 to 23, 1 death.
Uruguay: Montevideo, July 8 to 15, 1 case.

YELLOW FEVER.

Brazil: Bahia, July 16 to 21, 9 cases, 1 death; Rio de Janeiro, June 30 to July 7, 3 deaths.
Colombia: Panama, August 1 to 8, 2 cases, 1 death.
Cuba: Havana, July 27 to August 3, 9 deaths; Santiago, July 22 to 29, 8 cases, 3 deaths.

CHOLERA.

India: Bombay, July 4 to 18, 1 death; Calcutta, July 1 to 8, 4 deaths.
Japan: Yokohama, July 15 to 22, 1 death.

PLAGUE.

China: Amoy, July 8 to 15, 275 deaths; Hongkong, June 24 to July 7, 306 cases, 305 deaths.
Egypt: Alexandria, July 1 to 16, 7 deaths.
India: Bombay, July 4 to 18, 115 deaths; Calcutta, July 1 to 8, 7 deaths.

CHANGE OF ADDRESS.

Beede, S. C., from Surprise, Neb. to David City, Neb.
Bird, J. H., from 1407 to 102 So. Ewing Ave, St. Louis, Mo.
Batts, E. L., from Galveston to 602½ Main St., Houston, Texas.
Curl, J. L., from Osa to 318 S. Third St., Clinton, Mo.
Cochran, C. C., from Hamilton to 218½ E. State St., Jacksonville, Ill.
Chilgren, G. A., from Hospital for Insane to Yankton, S. D.
Caldwell, W. S., from Vancouver, B. C. to care Hongkong and Shanghai Banking Corporation, Yokohoma, Japan.
Guitéras, R., from 23 W. 53d to 63 W. 54th St., New York City.
Kimball, A. L., from Ann Arbor, Mich. to Gen'l Del., Boston, Mass.
Lewis, T. H., from St. Luke's Hospital to 346 Oak Ave, Evanston, Ill.
Madden, J., from Sentinel Bldg to 316-317 Goldsmith Bldg, Milwaukee, Wis.
Middleton, T. S., from 18 Maple St. to 219 Hampden Court B, Chicago.
Nohr, R., from 1108 to 1718 E. 5th St., Dayton, Ohio.
Nelson, C. D., from Greeley, Colo. to Pomona, Cal.
Norton, C. F., from 61 Stouton St., El Paso, Texas, to 1104 Guadalupe St., Austin, Texas.
Norrick, J. H., from Pennsville, to Fredricktown, Knox Co., Ohio.
Pickett, W. H., from 6th and M Sts, to 642 Preston St., Louisville, Ky.
Raub, J. F., from 421 B St., N. E., to 225 First St. N. E., Washington, D. C.
Suarez, J. M., from care Mr. Romer, Milnberg to 1226 Louisa St., New Orleans, La.
Wright, John B., from Coharie, Sampson Co. to Granite Falls, Caldwell Co., N. C.
Werner, C. A., from Harcourt, Iowa to 249 E. 9th St., St. Paul, Minn.